Mediterranean Marine Science

Vol 21, No 2 (2020)

Vol 21, n2

New records of rare species in the Mediterranean Sea (May 2020)

VASILIS GEROVASILEIOU, OKAN AKYOL, ZINAH AL-HOSNE, REEM ALSHIKH RASHEED, EYLUL ATAÇ, GIAMBATISTA BELLO, ILIJA ĆETKOVIĆ, MARIA CORSINI-FOKA, FABIO CROCETTA, FRANCESCO DENITTO, PAOLO GUIDETTI, BENAL GÜL, GIANNI INSACCO, CARLOS JIMENEZ, CATALDO LICCHELLI, LOVRENC LIPEJ, ANDREA LOMBARDO, EMANUELE MANCINI, GIULIANA MARLETTA, NIKOLAS MICHAILIDIS, ANA PEŠIĆ, DIMITRIS POURSANIDIS, WAHID REFES, HAMZA SAHRAOUI, IOANNIS THASITIS, FRANCESCO TIRALONGO, ZAFER TOSUNOĞLU, DOMEN TRKOV, ANGLEO VAZZANA, BRUNO ZAVA

doi: 10.12681/mms.22148

Collective Article B

Mediterranean Marine Science
Indexed in WoS (Web of Science, ISI Thomson) and SCOPUS
The journal is available on line at http://www.medit-mar-sc.net
DOI: http://dx.doi.org/22148

New records of rare species in the Mediterranean Sea (May 2020)

Vasilis GEROVASILEIOU[1], Okan AKYOL[2], Zinah AL-HOSNE[3], Reem ALSHIKH RASHEED[3], Eylül ATAÇ[4], Giambattista BELLO[5], Ilija ĆETKOVIĆ[6], Maria CORSINI-FOKA[7], Fabio CROCETTA[8], Francesco DENITTO[9], Paolo GUIDETTI[10], Benal GÜL[11], Gianni INSACCO[12], Carlos JIMENEZ[13], Cataldo LICCHELLI[9], Lovrenc LIPEJ[14], Andrea LOMBARDO[15], Emanuele MANCINI[16], Giuliana MARLETTA[15], Nikolas MICHAILIDIS[17], Ana PEŠIĆ[6], Dimitris POURSANIDIS[18], Wahid REFES[19], Hamza SAHRAOUI[19], Ioannis THASITIS[17], Francesco TIRALONGO[15], Zafer TOSUNOĞLU[4], Domen TRKOV[14,20], Angelo VAZZANA[21] and Bruno ZAVA[12,22]

[1] Institute of Marine Biology, Biotechnology and Aquaculture, Hellenic Centre for Marine Research, Heraklion, Greece
[2] Ege University Faculty of Fisheries, 35440 Urla, Izmir, Turkey
[3] Department of Zoology, Faculty of Science, Tishreen University, Lattakia, Syria
[4] Ege University Faculty of Fisheries, 35100 Bornova, Izmir, Turkey
[5] Arion, Via Colombo 34, 70042, Mola di Bari, Italy
[6] Institute of Marine Biology, University of Montenegro, Dobrota bb, P Fah 69, 85330 Kotor, Montenegro
[7] Institute of Oceanography, Hydrobiological Station of Rhodes, Hellenic Centre for Marine Research, Cos Street, 85100, Rhodes, Greece
[8] Department of Integrative Marine Ecology, Stazione Zoologica Anton Dohrn, Villa Comunale, I-80121 Naples, Italy
[9] Hydracoop, Istituto di Ricerca per la Pesca e l'Acquacoltura, Viale Ugo Foscolo 30, I-73100 Lecce, Italy
[10] ECOSEAS Lab. UMR 7035, Université Côte d'Azur, CNRS, Parc Valrose 28, Avenue Valrose, 06108 Nice, France
[11] Department of Fisheries and Seafood Processing Technology, Faculty of Aquatic Science, Istanbul University, Ordu Cad No 8 Fatih, Istanbul, Turkey
[12] Museo Civico di Storia Naturale, via degli Studi 9, 97013 Comiso (RG), Italy
[13] Enalia Physis Environmental Research Centre, Cyprus
[14] Marine Biology Station, National Institute of Biology, Piran, Fornače 41, 6330 Piran, Slovenia
[15] Department of Biological, Geological and Environmental Sciences, University of Catania, Via Androne 81, 95124 Catania, Italy
[16] Laboratory of Experimental Oceanology and Marine Ecology, University of Tuscia, Civitavecchia, Italy
[17] Department of Fisheries and Marine Research, 101 Vithleem Str., 1416 Strovolos, Nicosia, Cyprus
[18] Institute of Applied and Computational Mathematics, Foundation for Research and Technology-Hellas (FORTH), N. Plastira 100, Vassilika Vouton, 70013 Heraklion, Greece
[19] Laboratoire de recherche 'Ecosystèmes marin et littoral-Equipe: Biodiversité et gestion des écosystèmes exploités', Ecole National Supérieure des Sciences de la Mer et de l'Aménagement du Littoral, Campus universitaire de Dély Ibrahim -BP 19 Bois des Cars-Dély Ibrahim, Algiers, Algeria
[20] Jožef Stefan International Postgraduate School, Jamova cesta 39, 1000 Ljubljana, Slovenia
[21] Via Str. prima Giuffrè 32, 89122 Reggio Calabria, Italy
[22] Wilderness studi ambientali, via Cruillas 27, 90146 Palermo, Italy

Abstract

This Collective Article presents information about 17 taxa belonging to four Phyla (one Cnidaria, two Arthropoda, four Mollusca, and ten Chordata) and extending from the Western Mediterranean to the Levantine Sea. The new records were reported from nine countries as follows: **Algeria:** first published records of the clingfishes *Apletodon dentatus* and *Lepadogaster lepadogaster* after 1955; **France:** first record of the tripletail *Lobotes surinamensis* in French Mediterranean waters; **Italy:** new records of the rare bonito *Orcynopsis unicolor* and the recently described nudibranch *Elysia rubeni* from Sicily; first records of the parasitic cirriped *Sacculina eriphiae* and the nudibranch *Dondice trainitoi* in the Ionian Sea; first record of the nudibranch *Taringa tritorquis* in the Mediterranean Sea; first record of the tripletail *Lobotes surinamensis* in the North Ionian Sea; first documented record of the cephalopod *Macrotritopus defilippi* in the Adriatic Sea; **Slovenia:** first record of the Mediterranean endemic cryptobenthic goby *Odondebuenia balearica*; **Montenegro:** several recent occurrences of the critically endangered bull ray *Aetomylaeus bovinus* in the South-eastern Adriatic Sea; **Greece:** records of the nudibranch *Dondice trainitoi* in the Eastern Mediterranean Sea; new record of the occurrence of the Mediterranean spearfish *Tetrapturus belone* from Greece (Rhodes Island); **Turkey:** recent captures of the vulnerable ocean sunfish *Mola mola*, caught by purse-seine, in the Aegean Sea and the Dardanelles; new record of the luvar *Luvarus imperialis* along the Aegean coast of Turkey; **Cyprus:** first record of the habitat-forming hydroid *Lytocarpia myriophyllum*, often in considerable densities; first confirmed record

of the agujon needlefish *Tylosurus imperialis*; **Syria:** first record of the decapod *Ethusa mascarone*.

Introduction

Verified georeferenced occurrence records for marine species accompanied by relevant meta-data (e.g. depth, habitat, and functional traits) are indispensable for researchers and decision-makers in order to identify regional and thematic knowledge gaps, map and model distributions of species, predict shifts in distribution range under future climate change scenarios, evaluate the invasive potential of non-native species and, ultimately, to design management, restoration and conservation initiatives and adopt relevant measures (Gerovasileiou *et al*., 2019a; Katsanevakis *et al*., 2020; Melo-Merino *et al*., 2020). However, for rare or overlooked taxa, such data is often lacking from biogeographic information systems, such as OBIS (Ocean Biogeographic Information System) and GBIF (Global Biodiversity Information Facility), and their publication in peer-reviewed journals (e.g. as short notes) becomes more and more difficult with the exception of large collaborative initiatives (e.g. Katsanevakis *et al*., 2020).

Recognizing the importance of archiving unpublished records of species found in the Mediterranean Sea, *Mediterranean Marine Science* offers a platform for publishing records of rare marine species and/or information on the spatial distribution of species of special interest (e.g. protected and threatened taxa) through its new Collective Article, Series B, 'New records of rare species in the Mediterranean Sea'. All submissions to the Collective Article are peer-reviewed by at least one reviewer and the editor. Contributing authors appear as co-authors and are also cited at the beginning of the sub-section corresponding to their records. Taxonomy follows the World Register of Marine Species (WoRMS Editorial Board, 2020).

In this article, new records are provided for 17 species belonging to four Phyla (one Cnidaria, two Arthropoda, four Mollusca, and ten Chordata) and spanning across nine Mediterranean countries (Table 1), from the sea surface to a depth of 619 m. The cryptobenthic clingfishes *Apletodon dentatus* (Facciola, 1887) and *Lepadogaster lepadogaster* (Bonnaterre, 1788) were recorded in Algeria for the first time after 1955. The Atlantic tripletail *Lobotes surinamensis* (Bloch, 1790) was recorded for the first time in French Mediterranean waters (Ligurian Sea), and is the northernmost record of this species in the Western Mediterranean Sea, and also for the second time along the Ionian coast of Italy (Salento Peninsula), indicating further natural range expansion across the Mediterranean Sea. The rare plain bonito *Orcynopsis unicolor* (Geoffroy Saint Hilaire, 1817) was recorded along the south-eastern coast of Sicily. The rhizocephalan cirriped *Sacculina eriphiae* Smith, 1906 was recorded for the first time along the Ionian coast of Sicily, thus increasing knowledge on the distribution of this species, but also representing a rare case of double infection on the decapod *Eriphia verrucosa* (Forskål, 1775) (two specimens on the underside of the crab's body). The nudibranch *Taringa tritorquis* Ortea, Perez & Llera, 1982, originally known from the Macaronesian Archipelago, was recorded for the first time in the Mediterranean Sea (Ionian coast of Sicily), representing either a new arrival or simply an overlooked cryptobenthic species. Several records of the nudibranch *Elysia rubeni* Martín-Hervás, Carmona, K. R. Jensen, Licchelli, Vitale & Cervera, 2019, described recently, were reported for the first time from the Ionian coast of Sicily (2018-2020 observations), indicating that the species is not so rare in some marine areas.

The nudibranch *Dondice trainitoi* Furfaro & Mariottini, 2020, recently described from the Tyrrhenian Sea, was recorded for the first time in the Ionian Sea (Sicily) and from Crete Island, thus extending its distribution range to the Central and Eastern Mediterranean Sea, respectively. The rare cephalopod *Macrotritopus defilippi* (Vérany, 1851) was appropriately documented for first time in the Adriatic Sea (Italian coasts). The Mediterranean endemic cryptobenthic goby *Odondebuenia balearica* (Pellegrin & Fage, 1907) was reported for the first time from Slovenian waters, and is the northernmost record of this species in the Mediterranean Sea. Several recent occurrences of the critically endangered bull ray *Aetomylae-*

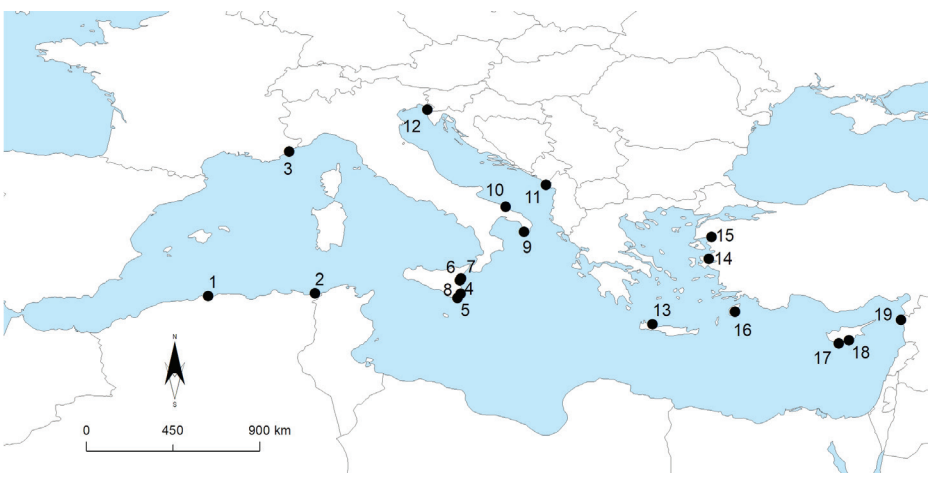

Fig. 1: Location of species records in the Mediterranean Sea.

us bovinus (Geoffroy Saint-Hilaire, 1817) were recorded in the South-eastern Adriatic Sea (Montenegro). The occurrence of the Mediterranean spearfish *Tetrapturus belone* Rafinesque, 1810 was documented, for the first time, off Rhodes Island in Greece. Recent observations of the vulnerable ocean sunfish *Mola mola* (Linnaeus, 1758), caught by purse-seine, were recorded in the Aegean waters of Turkey and the Dardanelles. A new record of the little-known luvar, *Luvarus imperialis* Rafinesque, 1810, was documented from the Aegean coast of Turkey. Numerous colonies of the habitat-forming hydroid *Lytocarpia myriophyllum* (Linnaeus, 1758) were reported for the first time around Cyprus, often in considerable densities, at a bathymetric range of 45-619 m. The occurrence of the agujon needlefish *Tylosurus imperialis* (Rafinesque, 1810) in Cyprus was confirmed for the first time. Finally, the decapod *Ethusa mascarone* (Herbst, 1785) was reported for the first time from Syrian waters.

Records are presented by major geographical zone of the Mediterranean Sea, from west to east, arranged in corresponding sub-chapters. The approximate location of species occurrence records is illustrated in Figure 1 and the corresponding information (i.e. Phylum, sub-chapter, country, location, and location number on map) is presented in Table 1.

The above species were recorded and documented using a wide variety of methods and information sources. Eight of the fishes recorded were caught by professional or recreational fishers, using various types of fishing gear (e.g. trammel nets, gillnets, seine fishing, longlines, and surface trolling) or were photographed in fish markets. In most cases, the fishes were later sold except for two threatened species, the bull ray *Aetomylaeus bovinus* and the ocean sunfish *Mola mola* that were released alive after capture. The hydroid *Lytocarpia myriophyllum* was recorded using on-board photographic material of experimental trawl catches, thus indicating that photographic documentation of non-targeted species obtained from fishing surveys could provide valuable information about regional biodiversity. Six invertebrate records were based on photographs taken *in situ* during scuba diving or samples collected during snorkelling, mostly on shallow rocky beds (1.5-21.6 m). One of these records was sourced from a citizen science platform. One species (*Ethusa mascarone*) was recorded within the framework of a study on the feeding habits of the red gurnard *Chelidonichthys cuculus* (Linnaeus, 1758). All in all, six records, both invertebrates and fishes, were based on specimens deposited in zoological collections under a reference code, including the re-examination of material from past surveys

Table 1. Information about species records by phylum. Sub-chapters (SC), basin (WMED – West Mediterranean, CMED – Central Mediterranean, ADRIA – Adriatic Sea, and EMED – Eastern Mediterranean), location, country, and location number as in Figure 1 (LN). [* Point locations represent more than one site in the broader area].

Taxon	SC	Basin	Location	Country	LN
Phylum Cnidaria					
Lytocarpia myriophyllum	4.5	EMED	South and North-western Cyprus	Cyprus	17*
Phylum Arthropoda					
Ethusa mascarone	4.7	EMED	Burj Islam, Lattakia region	Syria	19
Sacculina eriphiae	2.2	CMED	Avola, Sicily	Italy	5
Phylum Mollusca					
Dondice trainitoi	2.3	CMED	Santa Maria La Scala	Italy	7
	4.3	EMED	Crete	Greece	13
Elysia rubeni	2.3	CMED	Eastern Sicily	Italy	6*
Macrotritopus defilippi	3.1	ADRIA	Torre Incina, Bari	Italy	10
Taringa tritorquis	2.4	CMED	Santa Maria La Scala	Italy	8
Phylum Chordata					
Aetomylaeus bovinus	3.2	ADRIA	Between Bar and Ulcinj	Montenegro	11*
Apletodon dentatus	1.1	WMED	Algiers	Algeria	1
Lepadogaster lepadogaster	1.1	WMED	El Kala	Algeria	2
Lobotes surinamensis	1.2	WMED	Juan Le Pins	France	3
	2.5	CMED	Salento Peninsula	Italy	9
Luvarus imperialis	4.2	EMED	Edremit Bay	Turkey	15
Mola mola	4.1	EMED	Izmir Bay and Dardanelles	Turkey	14*
Odondebuenia balearica	3.3	ADRIA	Pacug	Slovenia	12
Orcynopsis unicolor	2.1	CMED	Ispica, Sicily	Italy	4
Tetrapturus belone	4.4	EMED	Rhodes Island	Greece	16
Tylosurus imperialis	4.6	EMED	Zygi	Cyprus	18

that was previously wrongly determined. To conclude, the above records have increased our knowledge of the regional biodiversity in several Mediterranean areas and the ecological habits of several species (e.g. depth range, habitats and feeding behaviour); and they have also considerably expanded the known distribution range of many species, including two nudibranchs that were described very recently (2019-2020) and one first species record at Mediterranean scale.

1. WESTERN MEDITERRANEAN

1.1 New records of the clingfish *Apletodon dentatus* (Facciola, 1887) and *Lepadogaster lepadogaster* (Bonnaterre, 1788) (Gobiesocidae, Gobiesociformes) along the Algerian coast

Hamza SAHRAOUI and Wahid REFES

Clingfishes (Gobiesocidae) are small cryptobenthic fishes, characterized by a scaleless and flattened body, an adhesive sucking disc on the ventral body surface and the absence of a swim bladder. As for many other small cryptobenthic fish species, knowledge of the distribution of Mediterranean gobiesocids is extremely poor. This could be attributed to their small size, hidden way of life, perfect camouflage, and limited scientific effort on the taxonomy of this family (Brandl *et al.*, 2011).

According to the works of Dieuzeide & Goëau-Brissonière (1951) and Dieuzeide *et al.* (1955), there are five species of Gobiosocidae along the Algerian coast, whose synonymy has been verified against WoRMS (WoRMS Editorial Board, 2020): *Apletodon dentatus* (Facciolà, 1887), *Diplecogaster bimaculata bimaculata* (Bonnaterre, 1788), *Lepadogaster candolii* Risso, 1810, *Lepadogaster lepadogaster* (Bonnaterre, 1788) and *Opeatogenys gracilis* (Canestrini, 1864).

Here we report on the presence of two Gobiosocidae: *Apletodon dentatus* (Facciolà, 1887) in the region of Algiers and *Lepadogaster lepadogaster* (Bonnaterre, 1788) in the region of El Kala. The previous published records of these species in Algeria date back to 1955 (Dieuzeide *et al*., 1955). Samples of these species from Algeria are also listed in the ichthyological collections of the Natural History Museum of Paris (four specimens of *L. lepadogaster* and two specimens of *A. dentatus* from the Oran region) but there is no information about the collection date (Les Bases de Données du Muséum National D'histoire Naturelle: https://science.mnhn.fr/institution/mnhn/search).

Two specimens of *L. lepadogaster* (Fig. 2A) were sampled in a cove (36.919ºN, 8.324ºE), stuck under pebbles, on May 10th, 2018. On January 27th, 2020, one specimen of *A. dentatus* (Fig. 2B-D) was found stuck to mussel lines (*Mytilus galloprovincialis*) at a depth of 10 m in a shellfish farm near Ain Taya, Algiers (36.795ºN, 3.313ºE).

The morphometric measurements for these samples are presented in Table 2. The collected specimens were preserved in 10% formalin and added to the reference collection of the "Biodiversity and Management of Exploited Ecosystems Research Laboratory" of Ecole National Supérieure des Sciences de la Mer et de l'Aménagement du Littoral (Centre of Sidi Fredj). The two *L. lepadogaster* specimens were kept in the same jar under code REKWR056100518, separately from *A. dentatus* (code RZSH001270120). The morphological characteristics of these specimens are concordant with the description by Brandl *et al.* (2011).

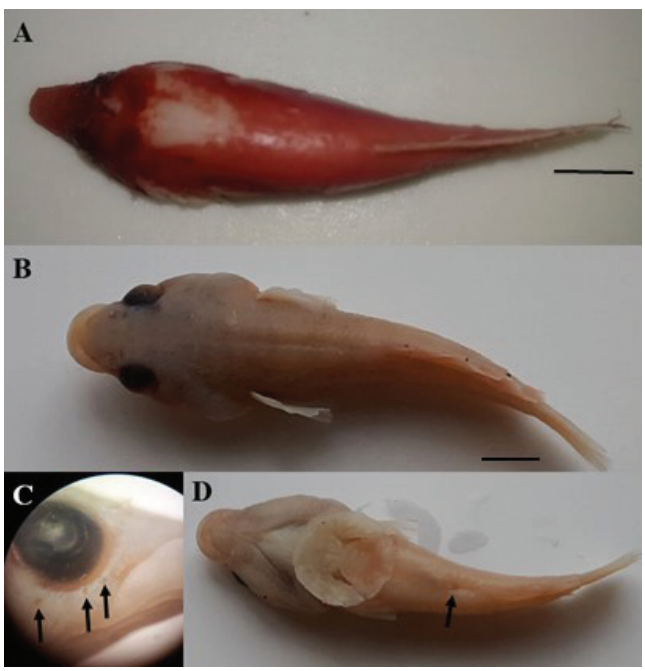

Fig. 2: (A) *Lepadogaster lepadogaster*; (B-D) *Apletodon dentatus*; (C) three lachrymal pores (arrows); (D) sucking disc and anal papilla (arrow). Scale bars: 0.4 cm.

Table 2. Morphometric measurements of the fixed individuals of *Lepadogaster lepadogaster* and *Apletodon dentatus*. Length/width measurements are given in mm.

Meristic data	*A. dentatus*	*L. lepadogaster*	
		1	2
Total length	41	30	29
Standard length	35	27	26
Head length	12	1	1
Head width	10	8	7
Ventral disc length	9	4	4
Ventral disc width	8.5	4	4
Eye diameter	3	2	2
Interorbital distance	4	2	2
Weight (g)	1.03	0.36	0.28

1.2 First record of the tripletail, *Lobotes surinamensis* (Bloch, 1790) along the French Mediterranean coast

Paolo GUIDETTI

Lobotes surinamensis is a cosmopolitan bony fish living in tropical and temperate waters. It can be found alone or in small groups, in estuarine and open waters, in natural and artificial habitats or associated with floating objects or seaweed (juveniles in particular). It can reach ~110 cm in size and ~25 kg in weight. The adults are benthonectonic, while juveniles are epipelagic (Froese & Pauly, 2013; Tiralongo in Dailianis *et al*., 2016; Tunçer & Önal in Karachle *et al*., 2016; Tiralongo *et al*., 2018).

The Mediterranean Sea is part of the native range of the tripletail, but the species has been traditionally reported as rare (Froese & Pauly, 2013). Most records come from the South-eastern Mediterranean, the central sector and the southern coasts of the basin (Kleitou & Crocetta in Mytilineou *et al*., 2016; Tiralongo in Dailianis *et al*., 2016; Tunçer & Önal in Karachle *et al*., 2016; De Carlo *et al*., 2017; Soufi-Kechaou *et al.,* 2018; Tiralongo *et al*., 2018; see also the references in the cited publications). Tiralongo *et al.* (2018) recently reported the presence of an established population in the Central Mediterranean Sea. In the Adriatic Sea, many records have been reported since the first occurrence in 2010 (Tiralongo in Dailianis *et al*., 2016 and references therein). Tunçer & Önal in Karachle *et al*. (2016, and references therein) reported on records of the species from the Aegean Sea. Recently, records of the tripletail became more common from the North-western Mediterranean (De Carlo *et al*., 2017 and references therein).

This contribution reports on the first record of the tripletail along the French Mediterranean, representing the northernmost record in the North-western Mediterranean Sea. One specimen of *L. surinamensis* (Fig. 3) was captured on the 31st of March 2020, at about 3 m depth, on a sandy substrate mixed with the seagrass *Posidonia oceanica*, off Juan Le Pins (43.564ºN, 7.114ºE; France, Ligurian Sea), by a local fisher using a gillnet (3.8 cm mesh size). At the site where the specimen was caught, no major freshwater inputs, such as rivers or lagoons, are present. The tripletail is unknown to the professional fishers in the area.

Fig. 3: Specimen of *Lobotes surinamensis* from Juan Les Pins (Ligurian Sea, France; Photo credit: T. Dalmasso).

The specimen was weighed, measured, and photographed by the fisher, and then sold immediately. Thus, it was not possible to obtain detailed morphometric and meristic data. The total length of the specimen was ~55 cm and its weight ~4.5 kg. The body was grey-greenish with irregular dark blotches and dark edges on the dorsal, anal, and caudal fins.

Considering all the available records, many authors hypothesized that the tripletail is expanding northwards, increasing in abundance, and establishing populations across the Mediterranean. This is likely to happen via dispersal (e.g. in association with floating objects; this regards juveniles in particular) and due to the ongoing water warming. From this perspective, considering the tripletail's global distribution (see global map in Froese & Pauly, 2013), its occurrence in regions colder than the South-eastern Mediterranean suggests that the tripletail is a thermo-tolerant rather than a warm-water species.

In conclusion, the available records support the hypothesis that the species is becoming more and more common throughout the Mediterranean basin and is contributing to the ongoing changes of Mediterranean ichthyofauna.

2. CENTRAL MEDITERRANEAN

2.1 New record of *Orcynopsis unicolor* (Geoffroy Saint Hilaire, 1817) in Italian waters

Gianni INSACCO and Bruno ZAVA

Orcynopsis unicolor (Geoffroy Saint-Hilaire, 1817) or plain bonito, is an epipelagic neritic species distributed mainly in the Eastern Atlantic, from 13°S to 60°N, from Norway to the Gulf of Guinea and in the Mediterranean Sea (Di Natale *et al*., 2009). It is found mainly in an arch along the North African Atlantic coast, from about 15°N to the Straits of Gibraltar and from there to the Southern Mediterranean Sea and Levantine Basin (Golani *et al*., 2006, Di Natale *et al*., 2009). In Italian waters, its presence is known from the Gulf of Genova, off Rimini, Elba Island and Sicily. The Sicilian specimen, labelled *Pelamys unicolor* Geoff., "Palamita imperiali", "very rare", is preserved in the collection of the Doderlein Museum in Palermo (Doderlein, 1878-79; catalogue number p. 51). On February 12th, 2020, a single specimen was

caught, at night, by a local professional fisher, using a traditional trammel net (called "impardata" by Sicilian fishers) in the waters off Porto Ulisse, Ispica, Province of Ragusa, Sicily (approximate coordinates 36.7024ºN, 15.0006ºE), on a sandy bottom with a *Posidonia oceanica* meadow, at about 4 m depth. The specimen was caught together with the following species: *Anguilla anguilla* (Linnaeus, 1758), *Diplodus sargus* (Linnaeus, 1758), *Sepia officinalis* Linnaeus, 1758, and *Octopus vulgaris* Cuvier, 1797. The specimen (Fig. 4), a juvenile female, was measured, weighed, photographed, and identified according to Collette (2016). Morphometric data and measurements are (in mm): total length 507; standard length 456; fork length 416; weight (in g) 1414. Meristic data are: dorsal fin: first 13 spines, second 13 rays, followed by 8 finlets; pectoral rays 23; pelvic rays 7; anal rays 15, followed by 7 finlets; intrapelvic process small and bifid (see Fig. 5); caudal peduncle with a well-developed lateral keel, between two smaller keels. Gill rakers on first arch: 17. The fresh specimen displayed the following colours: blue-black back with faint mottled pattern laterally but no prominent stripes or spots; silver lower sides; black anterior three-quarters of first dorsal fin, dark second dorsal fin and dorsal finlets, some yellow colouring on anal fin. The specimen was taxidermized using a cast and stored in the fish collection of Museo di Storia Naturale di Comiso, under code MSNC 4616. This note documents a new record of the rare *O. unicolor* found in Italian waters.

Fig. 4: *Orcynopsis unicolor* (Geoffroy Saint Hilaire, 1817) specimen caught off Porto Ulisse, Ispica (RG), Italy (code MSNC 4616).

Fig. 5: Detail of the intrapelvic process, small and bifid, in a juvenile *Orcynopsis unicolor* specimen.

2.2 First record of *Sacculina eriphiae* Smith, 1906 in the Ionian Sea: a rare case of double infection on *Eriphia verrucosa* (Forskål, 1775)

Francesco TIRALONGO and Emanuele MANCINI

Rhizocephala are highly specialized parasitic cirripeds (Order Rhizocephala) of decapod crustaceans. The genus *Sacculina* Thompson, 1836 is a parasitic castrator of crabs: these rhizocephalan parasites often cause castration in both sexes (Høeg, 1995). Depending on the location, the prevalence of these parasites of crabs is quite variable and has been reported to vary from few percent to almost 100% (Høeg & Lützen, 1985). For example, in a study conducted along Swedish coasts, the authors found a mean prevalence of 2.9% of *Sacculina carcini* Thompson, 1836 on *Carcinus maenas* (Linnaeus, 1758) (Werner, 2001). In another study, it was found that females were more frequently infected than males (Mouritsen *et al*., 2018).

Sacculina eriphiae Smith, 1906 is the only species of the genus found living as a parasite on *Eriphia verrucosa* (Forskål, 1775). Its prevalence has been reported to be 4.5% in males and 2.6% in females of *E. verrucosa* (Øksnebjerg, 2000). This latter species is a medium-sized crab that occurs in very shallow waters, from the rocky intertidal to a depth of a few metres. *Sacculina eriphiae* was recorded only in few Mediterranean locations: Italy (Elba, Gulf of Naples, and Gulf of Salerno), Croatia (Rovinj) and Turkey (Istanbul) (Øksnebjerg, 2000). A single record comes from the Black Sea: Bulgaria (Varna) (Øksnebjerg, 2000). However, there was no record of the species from the Ionian Sea (Øksnebjerg, 2000; Relini, 2010). The maximum reported diameter of the body of *S. eriphiae* is 45 mm. The live colour of immature specimens is whitish; while, mature specimens are yellow to yellow-brown in colour.

On the 29th of June 2019, a medium-sized female spec-

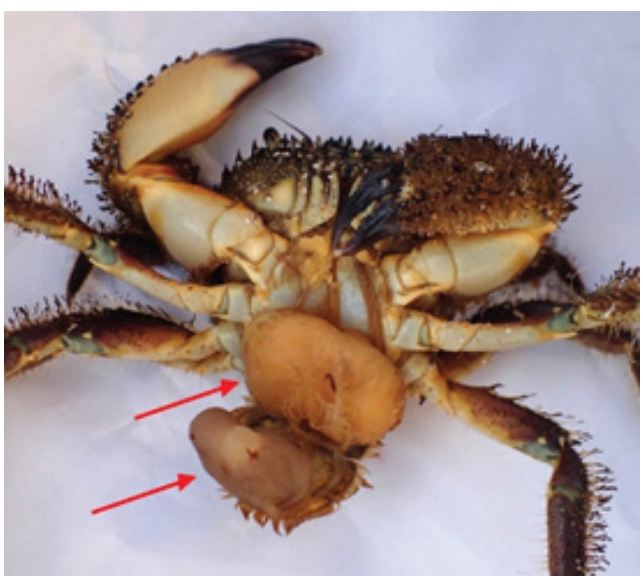

Fig. 6: The specimen of *Eriphia verrucosa* caught in the Ionian Sea (Italy) with a double *Sacculina eriphiae* infection. The red arrows indicate the two externae of *S. eriphiae*.

imen of *E. verrucosa* was caught by hand at a depth of ~1.5 m, during snorkelling activity at Avola (36.90502ºN, 15.14879ºE), along the Ionian coast of Sicily (Italy) (Fig. 6). After examination, two specimens of *S. eriphiae* were observed on the underside of the crab's body. The two specimens had a body diameter of 23 and 26 mm, while *E. verrucosa* had a carapace width (CW) of 45 mm and a carapace length (CL) of 33 mm. Soon after sampling, the specimens were fixed in 96% alcohol and deposited in the zoological collection of "Ente Fauna Marina Mediterranea" (Avola, Italy) with the following code: #EFMM-290619.

This record represents the first report of *S. eriphiae* in the Ionian Sea, thus increasing knowledge on the distribution of this species. Furthermore, the current work represents a rare documentation of double infection on *E. verrucosa* (Øksnebjerg, 2000).

2.3 New records of *Dondice trainitoi* Furfaro & Mariottini, 2020 (Gastropoda: Nudibranchia) and *Elysia rubeni* Martín-Hervás, Carmona, K. R. Jensen, Licchelli, Vitale & Cervera, 2019 (Gastropoda: Sacoglossa) in Eastern Sicily, Ionian Sea

Andrea LOMBARDO and Giuliana MARLETTA

This note reports on the finding of two recently described gastropods from the coasts of Eastern Sicily, Ionian Sea: *Dondice trainitoi* Furfaro & Mariottini, 2020 and *Elysia rubeni* Martín-Hervás, Carmona, K. R. Jensen, Licchelli, Vitale & Cervera, 2019.

In the Mediterranean Sea, the genus *Dondice* Er. Marcus, 1958 is represented by two species, *Dondice banyulensis* Portmann & Sandmeier, 1960 and *D. trainitoi* Furfaro & Mariottini, 2020 (Betti, 2011; Trainito & Doneddu, 2014; Furfaro & Mariottini, 2020). The latter is a species recently described from three areas of the Tyrrhenian Sea: Punta del Faro (Portofino, Genoa), Civitavecchia (Rome) and Procida Island (Naples) (Furfaro & Mariottini, 2020). On the 11th of July 2017, a specimen of *D. trainitoi* was found at 20 m depth in Santa Maria La Scala (Italy, Ionian Sea) (37.614014ºN, 15.174927ºE) on a rocky steep slope with photophilous assemblages. This note represents the first record of this species for Sicily and for the Ionian Sea, while it is the fourth report from the Mediterranean Sea. All specimens found in the Tyrrhenian Sea were observed during spring and summer in a range between 30-40 m of depth and most of them were found on hydroids (Furfaro & Mariottini, 2020). Instead, the specimen reported in this note was found on photophilous seaweeds in shallower waters (20 m).

The specimen (Fig. 7), photographed *in vivo* with an

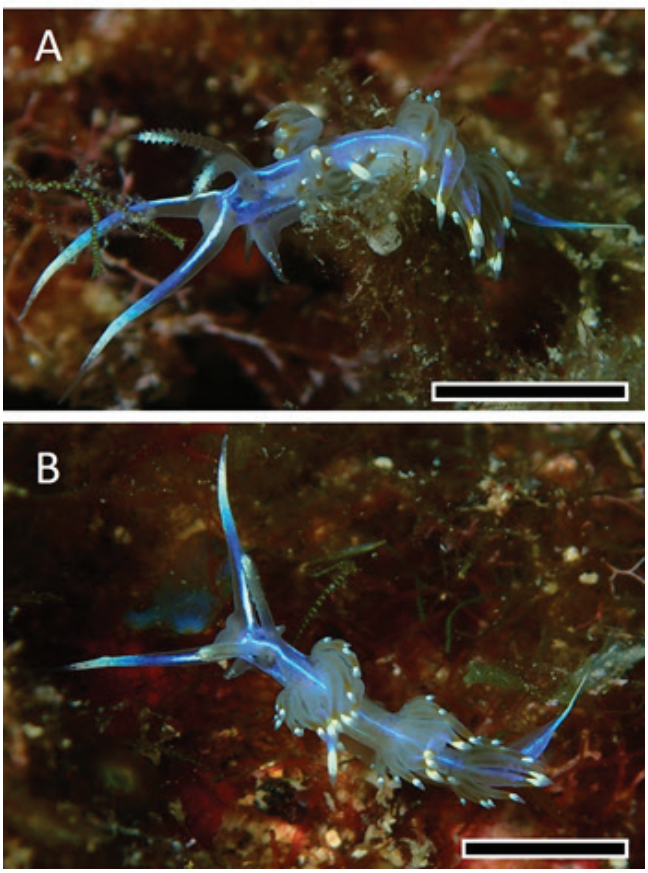

Fig. 7: *Dondice trainitoi* from Santa Maria La Scala (Italy, Ionian Sea). (A) Lateral view. (B) Dorsal view. Scale bars: 5 mm.

Table 3. Observations of *Elysia rubeni* reported from the eastern coast of Sicily, Italy.

Location	Coordinates	Number of specimens	Observation date	Depth	Substrate
Santa Tecla	37.639348ºN, 15.183511ºE	1 1	Jan 2020 Feb 2020	7.1 m 20.2 m	Turf of red filamentous algae, red calcareous algae
Santa Maria La Scala	37.612215ºN, 15.174729ºE	1 1 1 1 1	Feb 2018 April 2018 April 2019 June 2019 Jan 2020	7 m 7 m 7 m 7.4 m 8 m	Turf of red filamentous algae Turf of red filamentous algae *Halopteris scoparia* *Zonaria tournefortii* Turf of red filamentous algae
Aci Trezza	37.565619ºN, 15.195016ºE	1	May 2018	12.2 m	Turf of red filamentous algae
Bellatrix	37.534282ºN, 15.126266ºE	1	Nov 2019	10.1 m	Turf of red filamentous algae
Ognina	37.530923ºN, 15.120087ºE	1	July 2019	21.6 m	Turf of red filamentous algae

Olympus TG-4 Underwater Camera, was 15 mm long and had the same features as those described by Furfaro & Mariottini (2020). In particular, the specimen was characterized by a slight translucent cream body with blue iridescences. The notum had four ceratal clusters, the fourth of which was the smallest. On the upper part of each rhinophore, there were ten lamellae and the apical part of them had a cylindrical tip. There were three light blue lines present dorsally: the central one proceeded from the tail to the head where it bifurcated into two other lines extending towards each oral tentacle; the lateral blue lines started behind rhinophores and terminated towards the tail. Finally, the mandibles were visible through the epithelium and were black. According to Furfaro & Mariottini (2020) the latter features are diagnostic of *D. trainitoi*.

Recently, a new species of the genus *Elysia* Risso, 1818 was described by Martín-Hervás *et al.* (2020) under the name *Elysia rubeni* Martín-Hervás, Carmona, K. R. Jensen, Licchelli, Vitale & Cervera, 2019. This finding increases the diversity of *Elysia* in the Mediterranean to nine valid species, seven native and two non-indigenous species (Costello *et al*., 2020). Hitherto, *E. rubeni* has only been reported along the eastern and western coasts of Apulia (Italy) and is probably present from Crete to Malta (Martín-Hervás *et al.*, 2020).

In this short note, we present the first record of *E. rubeni* from the eastern coast of Sicily (Italy). Between 2018 and 2020, ten specimens of *E. rubeni* were found at different stations, at depths ranging from 7 to 21 m (Table 3). The specimens observed ranged from 5 to 10 mm in length and were found crawling on different substrates: red filamentous algae turf, *Halopteris scoparia* (Linnaeus) Sauvageau, *Zonaria tournefortii* (J.V.Lamouroux) Montagne, and red calcareous algae. Live animals were photographed with an Olympus TG-4 Underwater Camera. All specimens observed display the distinctive colour pattern of the species (Fig. 8): greenish body coloration with several yellow dots and bright blue greater spots scattered on the body surface, two blue dots below the eyes, white-greyish rolled and elongated rhinophores with a blue-purple band at the tips and wing-like parapodia. This new record extends our knowledge on the distribution of the species and may indicate that *E. rubeni* is not so rare in the Mediterranean basin.

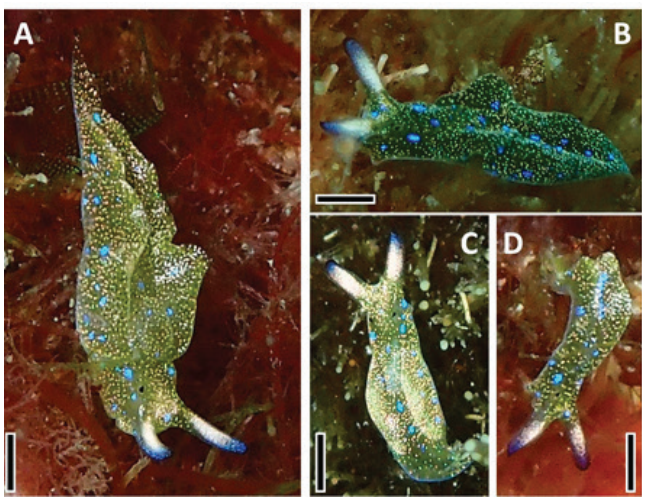

Fig. 8: Specimens of *Elysia rubeni* found along the eastern coast of Sicily (Italy). (A) Dorso-lateral view of a specimen from Bellatrix. (B) Left lateral view of a specimen from Santa Maria La Scala. (C) Dorsal view of a specimen from Santa Maria La Scala. (D) Right dorso-lateral view of a specimen from Aci Trezza. Scale bars: 1 mm.

2.4 First record of *Taringa tritorquis* Ortea, Perez & Llera, 1982 (Gastropoda: Nudibranchia) in the Mediterranean Sea

Andrea LOMBARDO and Giuliana MARLETTA

Taringa tritorquis Ortea, Perez & Llera, 1982 is a nudibranch of the family Discodorididae Bergh, 1891, originally described on the basis of three specimens measuring 4-6 mm found in Lanzarote (Canary Islands) at 3 m depth (Ortea *et al.*, 1982). The species is characterized by rhinophores with a heart-shaped section and an anterior groove, gills formed by six uni-bipinnate white leaves with a wide triangular rachis, edge of the rhinophore and gill sheaths with, respectively, 6-8 and 10 white spiculous tubercles, crown-shaped. It differs from the other congeneric species by its distinct external morphology, and particularly by the presence of tubercles in rhinophores and gill sheaths. Despite such diagnostic characteristics, the species was barely cited in subsequent literature. Espinosa & Ortea-Rato (2001) recorded it from Madeira, Azores, and Cuba, although subsequent studies revealed that specimens from Azores and Cuba belonged to *T. telopia* Marcus, 1955 (Moro & Ortea, 2015). Therefore, its actual distribution comprises the Canary Islands and, presumably, Madeira (L. Moro, personal communication).

We hereby report on the finding of two specimens of *T. tritorquis* in Santa Maria La Scala (Italy, Ionian Sea) (37.617222ºN, 15.172222ºE), in December 2018 and August 2019 under stones at 9.5 m depth. The specimens had an orange-yellowish or red-brownish body (Fig. 9). The first individual (Fig. 9A) was 6 mm long, while the other one (Fig. 9B) was smaller. Both specimens were characterized by the middle part of the notum being darker than the marginal parts, rhinophores with a heart-shaped section, edge of rhinophore and gill sheaths with white

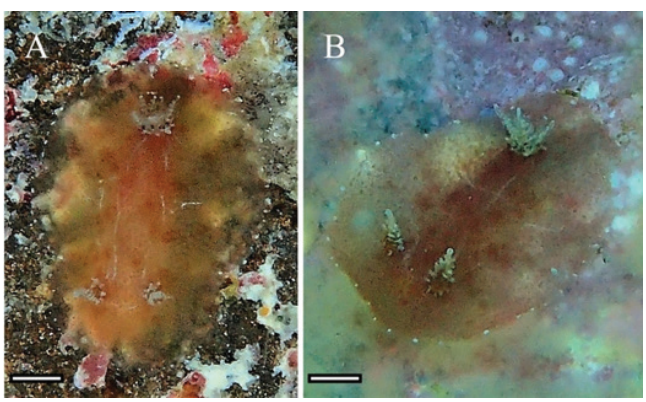

Fig. 9: *Taringa tritorquis* from Santa Maria La Scala (Italy, Ionian Sea). (A) The specimen found in December 2018. (B) The specimen found in August 2019. Scale bars: 1 mm.

spiculous crown-shaped tubercles, notum with white thin lines, and white dots on the edge. The specimens were not collected. Based on present observations, *T. tritorquis* could be a sciaphilous species living in shallow waters below stones and feeding on sponges, as also reported for other species of the genus *Taringa* Er. Marcus, 1955 (see Perrone, 1985). The present records constitute the first finding of *T. tritorquis* in the Mediterranean Sea. Indeed, the species may be a new arrival in the area, and its spread could have been caused by human activities. However, *T. tritorquis* is generally a poorly known taxon with cryptic behaviour, and it may have been simply overlooked until now.

Fig. 10: Specimen caught in the North Ionian Sea (Photo credit: R. Giannotta).

2.5 First record of *Lobotes surinamensis* (Bloch, 1790) in the North Ionian Sea

Cataldo LICCHELLI and Francesco DENITTO

The Atlantic tripletail *Lobotes surinamensis* (Bloch, 1790) has a worldwide distribution, both in tropical and subtropical marine waters. In the Mediterranean Sea, *L. surinamensis* is the only representative of the family and is considered a rare species. However, on the basis of recent records, the species is not as rare as previously thought (Bilge *et al*., 2017; Tiralongo *et al*., 2018). Adults are benthopelagic and are occasionally found in open waters (Deidun *et al*., 2010); while juveniles are usually known to inhabit bays, muddy estuaries and river mouths. Several recent Mediterranean records are mainly from the western and central part, such as the Balearic, Maltese, Italian, Tunisian and Algerian waters (Deidun *et al*., 2010; Bilge *et al*., 2017 and references herein; Tiralongo *et al*., 2018). Other records come from the Adriatic Sea (Tiralongo in Dailanis *et al*., 2016 and references herein), the Aegean Sea, both Greek and Turkish waters (Bilge *et al*., 2017 and references herein), and in the Levantine Sea (Kleitou & Crocetta in Mytilineou *et al*., 2016). As regards the Italian coasts, records are mainly from the Tyrrhenian Sea (Tiralongo *et al*., 2018 and references herein). Single records come from the Italian Adriatic Sea (Tiralongo in Dailanis *et al*., 2016) and the Ionian coast of Sicily (Tiralongo *et al*., 2018). On the 5th of October 2016, a specimen of *L. surinamensis* (Fig. 10) was caught by a local fisher using a set longline at approximately 25 m depth in the Italian Ionian waters of Salento Peninsula, Apulia Region (39.800ºN, 18.115ºE), approximately four nautical miles from the coastline. The total length of the specimen was 420 mm and the total weight 2300 g. The bottom was characterised by the presence of large rocky patches covered by encrusting benthos on sandy bottom. This record represents the first occurrence of the Atlantic tripletail in the North Ionian Sea and the second one in Ionian waters (Tiralongo *et al*., 2018). The current record can be interpreted as a signal of further natural range expansion of the species in the Mediterranean Sea, probably favoured by changing hydrological conditions and the gradual increase in the average temperature of the basin.

3. ADRIATIC SEA

3.1 *Macrotritopus defilippi* (Vérany, 1851) (Cephalopoda: Octopodidae): first documented record in the Adriatic Sea

Giambattista BELLO and Angelo VAZZANA

The genus *Macrotritopus* includes only two aptly described species: *M. defilippi* (Vérany, 1851), which lives in the Mediterranean Sea and North-eastern Atlantic Ocean, and *M. beatrixi* Guerrero-Kommritz & Rodriguez-Bermudez, 2018, recently discovered in the Southern Caribbean Sea (Guerrero-Kommritz & Rodriguez-Bermudez, 2018). Both species are comparatively rare and characterized by small size, long-arms (typically III longest, I shortest) and a minute hectocotylus extremity (Norman *et al*., 2016). The presence of *M. defilippi* in the Adriatic (Bello, 2008) was recorded on the basis of contemporaneous reports from the central and northern part of this sea that, however, did not substantiate the identification with a description and a photograph of the specimen.

The above specimen (Fig. 11) was hand-collected from a rocky-crevice at a depth of 6 m in a sheltered bay, in the South-western Adriatic Sea (locality Torre Incina, Monopoli, province of Bari, Italy, 40.97430ºN, 17.25954ºE), during daytime, on the 12th of June 2014. It is deposited in the Zoology Museum of the University of Bari (accession number: MUZAC 6553).

Specimen features (measurements taken before fixation): male, close to maturity; total length = 27.3 cm; mantle length = 5.1 cm; arm lengths, right and left, respectively (in cm; * indicate regenerating tip): I = 18.2, 17.0; II = 21.4, 5.5*; III = 14.1 (hectocotylus), 18.1; IV = 16.6*, 23.6; suckers on hectocotylus = 102; hectocotylus tip barely visible to the naked eye; interbrachial web shallowest in E (between ventral arms); skin smooth with

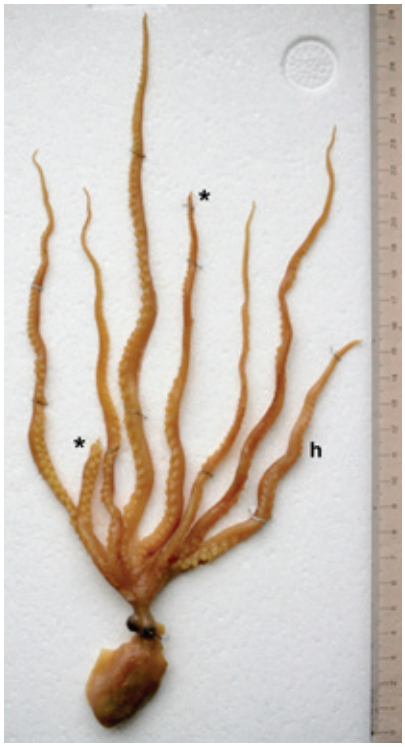

Fig. 11: *Macotritopus defilippi* from the South-western Adriatic Sea. * regenerating arm tips; h = hectocotylus.

reticulate colour pattern. The arm formula is IV > II > III = I; gill lamellae = 11. These features match the descriptions of *M. defilippi* found in the literature (Jatta, 1896; Naef, 1923; Norman *et al.*, 2016; Guerrero-Kommritz & Rodriguez-Bermudez, 2018), apart for the arm formula that, however, may be altered by recurrent arm autotomy (see for instance Guerrero-Kommritz & Rodriguez-Bermudez, 2018: fig. 4a).

As for the specific identification, the interbrachial web of the specimen distinguishes it from *M. beatrixi*, where the web is shallowest in A (Guerrero-Kommritz & Rodriguez-Bermudez, 2018).

More importantly, several characters distinguish this specimen from another long-armed Mediterranean octopus, namely *Octopus salutii* that, unlike *M. defilippi*, features a laterally asymmetrical interbrachial web, all arms of about the same length, loose skin and, above all, a hectocotylus bearing many more suckers (136-139) and a huge ligula (cf. Naef, 1923). A comparison between *M. defilippi* and *O. salutii* is necessary because of the superficial similarity between the former species and the juveniles of the latter species. According to the review by Norman *et al.* (2016), the former octopus lives down to 200 m, whereas Jatta (1896) refers to captures not deeper than 30 m and Guerrero-Kommritz & Rodriguez-Bermudez (2018) state that *Macrotritopus* species are shallow-water animals; as for *O. salutii*, it is doubtlessly a deeper-water octopus (100-700 m) (Norman *et al.*, 2016).

In summary, in our opinion, it is essential to document any future record of *M. defilippi* or any other species appropriately, as suggested by several sources (Bello *et al.*, 2014 and literature cited therein).

3.2 Several recent occurrences of the rare bull ray *Aetomylaeus bovinus* (Geoffroy Saint-Hilaire, 1817) (Myliobatidae) in the South-eastern Adriatic Sea (Montenegro)

Ilija ĆETKOVIĆ and Ana PEŠIĆ

The bull ray *Aetomylaeus bovinus* (Geoffroy Saint-Hilaire, 1817) has been considered as one of the rare elasmobranch species found in the Mediterranean Sea (GFCM, 2018). Its distribution range extends from Madeira and Morocco to South Africa, including the entire Mediterranean, but does not include the Black Sea (Serena, 2005). The latest assessment of the International Union for Conservation of Nature (IUCN) listed it as critically endangered (CR) at Mediterranean level (Walls & Buscher, 2016). The records presented here are based on information obtained from commercial small-scale fishers in the southern part of the Montenegrin coast. All described catches were recorded on the southern part of the Montenegrin coast, between the towns of Bar and

Fig. 12: (A) *Aetomylaeus bovinus* individuals caught on the 21st of October 2019. (B) individuals recorded on the 8th of November 2019.

Ulcinj. No morphometric measurements of the caught individuals were taken due to their fast disposal by the fishers. Four large individuals of *A. bovinus* (estimated total weight of 40 kg) were recorded for the first time on the 21st of October 2019 (coordinates: 42.02805556° N, 19.13305556° E) (Fig. 12A). A second catch was reported on the 8th of November (Fig. 12B): two individuals of similar size with a total weight of 18 kg (collectively) (coordinates: 41.99583333° N, 19.13416667° E). A third record was reported on the 19th of November near Bar when two juveniles of *A. bovinus* were caught and released (coordinates: 42.01472222ºN, 19.13944444ºE). All catches occurred in the larger mesh size of set gillnets (>140 mm) targeting smoothhound sharks (*Mustelus spp*.) between 35 and 50 m depth. Both fishers reported several other catches of the species during the mid-fall of 2019 and always in groups that included less than five specimens. According to fishers, the catches consisted of quite different-sized individuals, including very small ones. The bull ray is not considered as economically commercially important species (La Mesa *et al*., 2016). The available data on the occurrence of *A. bovinus* along the Montenegrin coasts during the mid-fall period provide additional knowledge on its distribution range. To date, the majority of records of *A. bovinus* in the Adriatic originate from its northern part.

3.3 First record of the cryptobenthic goby *Odondebuenia balearica* (Pellegrin & Fage, 1907) in Slovenia

Domen TRKOV and Lovrenc LIPEJ

Odondebuenia balearica (Pellegrin & Fage, 1907) is a little-known small-sized cryptobenthic species of the family Gobiidae, which is known only from the Mediterranean basin. As regards the Adriatic Sea, it is present along the eastern coast, in the southern and central part, and also in the Kvarner area and along the Istrian Peninsula (Kovačić, 2005 and references therein). To date, it has not been recorded in the Gulf of Trieste or the Slovenian part of the Adriatic Sea.

A review of the cryptobenthic fish fauna of the ichthyological collection of the Marine Biology Station, revealed two specimens of *O. balearica* that were wrongly determined as *Millerigobius macrocephalus* (Kolombatović, 1891) (Fig. 13). They were caught during a cryptobenthic fish fauna survey on the 17th of August 2001 in the Slovenian sea, in Pacug (45.52666667ºN, 13.59250000ºE). The specimens were caught in a boulder field under stones covered mainly by *Jania virgata* (Zanardini) Montagne, 1846, and *Halopithys incurva* (Hudson) Batters, 1902, at 2.5 m depth. The specimens were anesthetized with the narcotic Quinaldine (Sigma-Aldrich), which was diluted to 1:15 solution with alcohol and sprayed into the shelter using a laboratory wash bottle. The anesthetized fish were then caught with a hand net. The specimens were determined as *O. balearica*, using the identification key for Gobiidae of the Adriatic Sea (Kovačić, 2008). In order to study the fish scales and lateral line system of the head,

Fig. 13: Two specimens of *Odondebuenia balearica* caught in the Slovenian Sea: (A) IC-MBP 015, male, 23.17 mm SL; (B) IC-MBP 029, female, 22.69 mm SL.

the specimens were reversibly stained in 2% solution of Cyanine Blue added to distilled water, as proposed by Saruwatari *et al*. (1997). Basic morphometric measurements and meristic counts of preserved specimens stored in the ichthyological collection are presented in Table 4. According to Kovačić (2008), the species is characterized by a lateral-line system with suborbital papillae, without a longitudinal row *a*; six transverse suborbital rows (the last one with one papilla); lateral-line system with anterior oculoscapular and preopercular head canals, absent posterior oculoscapular canal and separated pelvic fins.

These two specimens represent the first record of *O. balearica* in the Slovenian sea and the northernmost finding of this species in the Mediterranean Sea, as well. This goby was probably overlooked in the past due to its cryptic lifestyle. However, due to new approaches and techniques, such as fluid-preserved fish staining, scuba diving and suitable fish sampling (Saruwatari *et al*., 1997; Glavičić & Kovačić, 2016), new findings of other cryptobenthic fish species in the Slovenian Sea can be expected.

Table 4. Morphometric measurements, meristic counts, and collection number of two specimens of *Odondebuenia balearica* caught in the Slovenian Sea.

Collection number	IC-MBP 015	IC-MBP 029
Sex	male	female
Morphometric measurements (mm)		
Total length (TL)	28.65	28.51
Standard length (SL)	23.17	22.69
Meristic counts		
First dorsal fin rays	VI	VI
Second dorsal fin rays	I/11	I/11
Pectoral fin rays	14	15
Pelvic fin rays	I/5	I/5
Anal fin rays	I/9	I/9

4. EASTERN MEDITERRANEAN

4.1 Recent captures of the ocean sunfish *Mola mola* (Molidae) from the Aegean Sea, Turkey

Okan AKYOL and Zafer TOSUNOĞLU

The ocean sunfish (hereafter sunfish), *Mola mola* (Linnaeus, 1758) is a pelagic species that is often observed drifting or floating horizontally close to the sea surface, and feeds on jellyfish, crustaceans, small fishes and possibly algae (Golani *et al*., 2006; Potter & Howell, 2011). It is the largest (reaching 4.2 m in length and weighing up to 2300 kg) and most fecund (300 million eggs) teleost fish in the world and whilst it is considered to be epipelagic, widespread and ubiquitous, little is known about its distribution and habitat preferences (Potter & Howell, 2011; Breen *et al.*, 2017). The sunfish occurs in warm and temperate zones of all oceans and has been occasionally reported from the Mediterranean Sea (Golani *et al*., 2006; Pope *et al*., 2010). The sunfish has been known from Greek seas (Papaconstantinou, 2014) since 1883 and from Turkish seas (Bilecenoğlu *et al*., 2002) since 1915.

Despite being found in all oceans of the world, limited information is available about its basic ecology, reproductive biology or population dynamics, and the global status of the species is unknown (Pope *et al.*, 2010). This ichthyologic note presents incidental catches of *M. mola* by purse-seiners in the Eastern Aegean Sea. On 3 and 28 October 2019, two specimens of *M. mola* were caught consecutively from Izmir Bay (35 m depth; coordinates: 38.539167ºN, 26.784ºE) and the Dardanelles (20 m depth; coordinates: 40.01395ºN, 26.27055ºE) by commercial purse-seiners targeting sardine (*Sardina pilchardus*) (Fig. 14). The sunfishes were photographed and then released to the water alive by slipping them over the headline of the purse-seine nets.

These photographic records are the first from the Izmir Bay and Dardanelles purse-seine fishery. The considerable size of the individual that was caught in the Dardanelles (estimated weight of about 500 kg) attracted the attention of the national newspapers and media. The other individual was estimated to weigh about 250 kg according to fishers. The sunfish caught in the Dardanelles was found among a large number of jellyfish (Fig. 14A), while the other one was caught with sardines (Fig. 14B). Using bioenergetics modelling, Grémillet *et al.* (2017) estimated that an average 121 kg sunfish requires 71 kg of jellyfish per day to meet its energy requirements. Thus, we can assume that the sunfish in the Dardanelles was probably feeding in the area.

Globally, sunfish are subjected to bycatch by longlines, drift gillnets and midwater trawls in numerous fisheries (Pope *et al.*, 2010). Therefore, *M. mola* has been listed in the IUCN Red List of Threatened Species as vulnerable (VU), even if it is a non-target fish species. In addition to the above fishing types, this short article presents new evidence on *M. mola* caught by purse-seine fishing in the Aegean Sea.

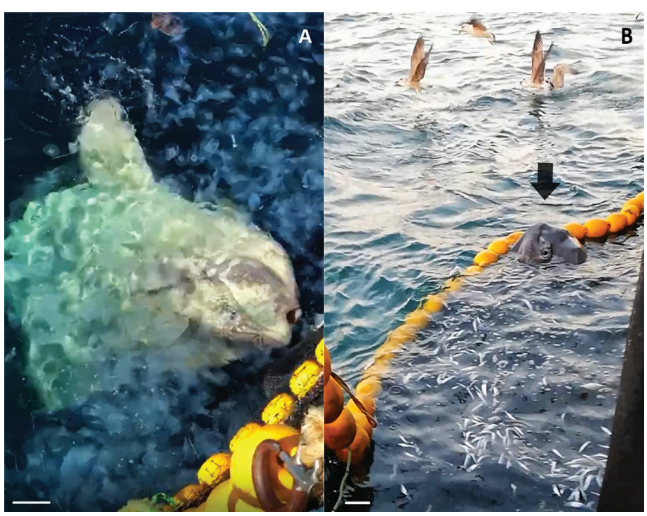

Fig. 14: (A) *Mola mola* specimens, captured from the Dardanelles, Çanakkale and (B) from Izmir Bay, Aegean Sea, Turkey (scale bars: 150 mm).

4.2 The rare and little-known luvar, *Luvarus imperialis* Rafinesque, 1810, from Edremit Bay (Aegean coast of Turkey)

Benal GÜL and Eylül ATAÇ

Luvarus imperialis Rafinesque, 1810 (Pisces: Luvaridae) is an oceanic pelagic fish that has been rarely reported from the Mediterranean Sea over the last decades. Its first record in the Mediterranean was reported off the Iberian Peninsula and the Balearic Islands, where it was rarely caught in the 1900s (Grau *et al*., 2000). Other records are known from Tunisia (Bradai *et al*., 2004), Italy (Lipej *et al*., 2007), the Aegean and Levantine coasts of Turkey (Bilecenoğlu *et al*., 2014), Greece (Papaconstantinou, 2014) and Algeria (Gerovasileiou *et al*., 2017). The most recent record from Turkey is that of Irmak and Alparslan (2008) who reported an individual measuring 171 cm total length in the Çanakkale Strait, in February 2005.

On February 13, 2020, a specimen of *L. imperialis* (Fig. 15) was found stunned in shallow waters on the shore of Akçay in Edremit Bay, North-eastern Aegean Sea (39.5809ºN, 26.9199ºE). The luvar had a total length of 171 cm and weighed 77 kg. The measurements of the individual are shown in Table 5. Its body was flattened, oval-shaped and high except the tail base. A pair of small-

Fig. 15: *Luvarus imperialis* (Rafinesque, 1810) from Edremit Bay, Aegean coasts of Turkey (Photo credit: Benal Gül).

er keels was present at each side of the caudal fin base. The whole body was covered by tiny pink-orange scales. Its metallic blue-grey skin was visible in the areas with missing scales. No wounds or scars were observed; however, the dorsal fin rays were damaged during transportation of the fish. Sex determination was not possible. The luvar was put up for sale in Istanbul Fish Market where it was sold at a low price.

Table 5. Morphometric measurements of the *Luvarus imperialis* specimen. TL: total length.

Parameter	Measurement	% of TL
Total length	171 cm	100
Fork length	165 cm	96.49
Standard length	150 cm	87.72
Body height	42 cm	24.56
Body width	23.5 cm	13.74
Dorsal fin length	57 cm	33.33
Anal fin length	57 cm	33.33
Pectoral fin length	33.2 cm	19.42
Weight	77 kg	-

4.3 *Dondice trainitoi* Furfaro & Mariottini, 2020 (Mollusca: Gastropoda: Nudibranchia) in the Eastern Mediterranean Sea

Dimitris POURSANIDIS and Fabio CROCETTA

The nudibranch genus *Dondice* Er. Marcus, 1958 includes two species in the Mediterranean Sea, namely *Dondice banyulensis* Portmann & Sandmeier, 1960 and *Dondice trainitoi* Furfaro & Mariottini, 2020. Differences in several morphological features, among which the most characteristic ones are the chromatic body pattern (orangish in *D. banyulensis vs* creamish in *D. trainitoi*) and the masticatory jaws colour (dark red in *D. banyulensis vs* black in *D. trainitoi*), allow unambiguous and straightforward identification of both taxa even during fieldwork. However, whilst the former taxon is known to be widespread from the western to the eastern parts of the basin (Cervera *et al.*, 2004; Stamouli *et al.*, 2017), the latter is a recently described species, and it is only known so far from the central Mediterranean Sea (Tyrrhenian Sea, Italy) (Furfaro & Mariottini, 2020).

We hereby present the unpublished observations of three further specimens of *D. trainitoi* in the Mediterranean Sea. In particular, during a recreational dive performed by Manolis Darakis on the 14th of February 2020, two specimens of this taxon were found off Kalami (Greece, Crete, 35.4706667ºN, 24.1407389ºE), crawling on a muddy bottom at 10 and 16 m depth (Fig. 16A). A subsequent screening of the underwater photos published by the same diver in the iNaturalist portal (http://www.inaturalist.org) allowed discovery of an additional specimen (most likely a juvenile), found in the same area in July 2019 while crawling on a muddy bottom at 25 m depth (Fig. 16B). On the 15th of February, we contacted

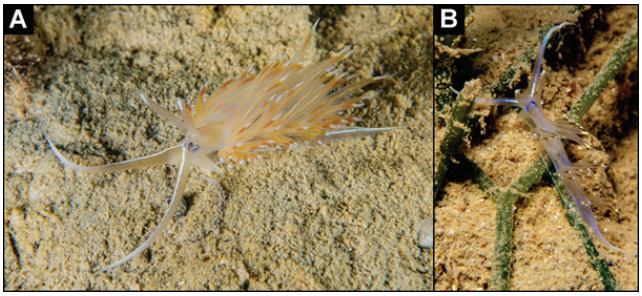

Fig. 16: *Dondice trainitoi* from Crete (Greece). (A) An adult specimen found in February 2020. (B) The juvenile specimen found in July 2019. (Photo credit: Manolis Darakis).

the diver, confirming species identification and asking for permission to use the photographic material in the current publication. Meanwhile, the same material became available through the OPK-Opisthobranquis portal (Pontes, 2020) to update the species record. This work reports on the presence of *D. trainitoi* in the waters of Crete Island, Eastern Mediterranean Sea, thus considerably extending the known distribution range of the species.

4.4 Occurrence of *Tetrapturus belone* Rafinesque, 1810 in the waters of Rhodes, Eastern Mediterranean

Maria CORSINI-FOKA, Gianni INSACCO and Bruno ZAVA

The migratory epipelagic spearfish *Tetrapturus belone* Rafinesque, 1810 belongs to the family Istiophoridae and has a distribution restricted to the Mediterranean basin. It is caught incidentally in swordfish, bluefin tuna and albacore fisheries and usually taken at the surface by harpoons, longlines, driftnets and setnets (Nakamura, 1985). Known prevalently from the Central Mediterranean, around Sicily, its occurrence has been ascertained for Tunisia in 2004 (Collette & Heessen, 2015 and references therein) and recently for Libya (Elbaraas *et al.*, 2019). Considered very rare in the Levant, the Mediterranean spearfish is reported south of Crete and occasionally in South Aegean waters, while it occurs in regions of the North-eastern Aegean Sea, such as the Müsellim Strait and Izmir Bay (Akyol *et al.*, 2005, 2013; Ceyhan & Akyol, 2014). However, very few records are available for this species in global biogeographic information systems (GBIF, 2020). Recently, there have been publications in newspapers and social media about the cruel behaviour of swimmers against a *T. belone* specimen in the shallow waters of Chalkida, Evvoia Island (West Aegean Sea), on 8 July 2019 (cf Skopis, 2019).

This istiophorid feeds primarily on pelagic fish such as Belonidae, Clupeidae and Scomberosocidae and the cephalopods *Tremoctopus violaceus* delle Chiaje, 1830 and *Illex coindetii* (Vérany, 1839) (Collette & Heessen, 2015 and references therein). In September 2010, the authors recorded predation on *Argonauta argo* Linnaeus, 1758 of a *T. belone* specimen, about 20 kg, caught in the Southern Tyrrhenian Sea and landed in Porticello (Sicily, Italy). The spearfish *T. belone* reaches a max total length

of 240 cm, a max weight of 70 kg, a common length of 200 cm and weight of 10-30 kg (Nakamura, 1985).

One specimen (125 cm in total length, 3.3 kg in weight), was observed and photographed at the local fish market of Rhodes town on 13 February 2020. Immediately after, the fish was sold by the same professional fisher, who captured it by boat-seine (Danish seine) at 40 m of depth, at sunrise, in Lardos Bay, east coast of Rhodes Island (36.0704ºN, 28.0182ºE). Following Nakamura (1985), the sample was identified with certainty as *T. belone* (Fig. 17), based on the following characteristics: Upper jaw prolonged into a slender spear, short in length about 18% of body length, round in cross section. First dorsal fin long and rather high throughout its length, height of anterior part slightly greater than body depth. Tips of first dorsal and first anal fins rounded. Pectoral fins narrow and short, upper margins curved. Caudal peduncle with double keels on each side, with a caudal notch on the dorsal and ventral surface. Single lateral line visible, curved above pectoral fin, then straight towards the tail. Anal opening far forward, located at a distance from the origin of the first dorsal equal to the height of the longest anal fin ray. The fresh specimen was dark blue on the dorsal side and silvery white laterally and ventrally.

Fig. 17: *Tetrapturus belone* Rafinesque, 1810 from Lardos, Rhodes, Greece, 13 February 2020.

The species was not previously known in the coastal waters of the study area and the same fisher declared that he had never seen that fish before, while it is reported among the non-targeted catches in swordfish the fishery off the east coasts of the island (e.g. Akyol & Ceyhan, 2012; Ceyan & Akyol, 2014). The adults are more common in the Western Mediterranean Sea, around Sicily and south of Corsica, and in the Adriatic while juveniles are generally found in the eastern basin, from the exception being a female with ripe gonads, reported in 2002 from Edremit Bay, North-eastern Aegean (Akyol *et al.*, 2013). The Mediterranean spearfish has been assessed as a "Least Concern" (LC) species by IUCN, but little is known about its biology and ecology (Collette & Heessen, 2015).

4.5 The habitat-forming hydroid *Lytocarpia myriophyllum* (Linnaeus, 1758) in Cyprus

Vasilis GEROVASILEIOU, Carlos JIMENEZ and Ioannis THASITIS

The feather-like hydroid *Lytocarpia myriophyllum* (Linnaeus, 1758) (Class: Hydrozoa, Family: Aglaopheniidae) is the largest hydroid of the Mediterranean Sea. Its colonies, which reach up to 1 m in height, are organized in tufts and anchored to detritic and sandy bottoms (Di Camillo *et al*., 2013; Bo, 2017). Therefore, it provides three-dimensional complexity to soft bottoms and functions as a habitat-former by stabilizing sediments and creating "animal forests", which harbour several associated taxa (Di Camillo *et al*., 2013; Cerrano *et al.*, 2015; Rossi *et al*., 2017).

However, limited information is available on its ecology and important gaps exist regarding its geographic distribution. *L. myriophyllum* occurs in the North Atlantic and Mediterranean Sea, while scattered records from South America and the Indo-Pacific are considered doubtful (Di Camillo *et al*., 2013 and references therein). Mediterranean records are mainly concentrated in the western basin, from the Strait of Gibraltar to the Tyrrhenian Sea, and the Adriatic Sea. In the Levantine Sea, only two records exist, without detailed information, from Israel (Di Camillo *et al*., 2013) and Egypt (GBIF, 2020). Its bathymetric distribution ranges from 15 m to 1800 m in the North Atlantic and 40 m down to approximately 1000 m in the Mediterranean Sea (Di Camillo *et al*., 2013; Bo, 2017).

The examination of archive photographic material of experimental trawl catches photographed on-board during the Mediterranean International Trawl Survey (MEDITS) in Cyprus, showed that several colonies of *L. myriophyllum* were caught as non-targeted species between 2011 and 2017 (Table 6). *Lytocarpia* was caught in several hauls, often in considerable densities, from southern and north-western parts of Cyprus. The bathymetric range of these catches was between 45 and 619 m (Table 6).

This large hydroid is conspicuous due to its golden-coloured, feather-like colonies (Fig. 18), which are characterized by lateral ramifications, and their root-like apparatus (Bo, 2017). Nevertheless, given the limitations of taxonomic identification based only on photographic material, future examination of collected specimens is considered necessary. In addition, it should be mentioned

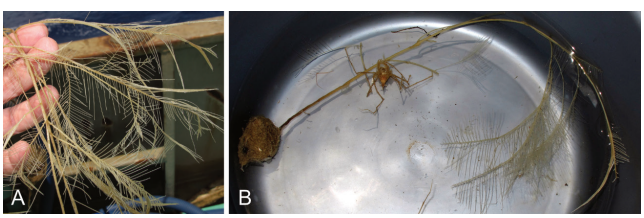

Fig. 18: Colonies of the feather-like hydroid *Lytocarpia myriophyllum* are characterized by gold-coloured lateral ramifications (A) and a root-like apparatus (B), which resembles a spongy web of filaments, adhering to sediment grains and biogenic fragments.

Table 6. Records of *Lytocarpia myriophyllum* from Cyprus. Information about the year, station number and name (according to MEDITS Cyprus), coordinates (DD) of the hauls' start and end, and average depth is provided for each record.

Year	No. Name Station	Start		End		Depth (m)
		North	East	North	East	
2011	13. Kolpos Episkopis	34.58453	32.87475	34.60653	32.85608	89.6
	20. Kolpos Episkopis	34.59586	32.85606	34.61017	32.81978	108.8
2012	10. Moni	34.69525	33.16661	34.69658	33.19664	59
	11. Kolpos Lemesou	34.67203	33.12008	34.68586	33.15717	94.7
	12. Akrotiri Lemesou	34.55981	32.94444	34.55639	35.97153	45.6
	14. Kolpos Episkopis	34.58336	32.76197	34.59119	32.79158	151.7
	15. Kolpos Episkopis	34.59117	32.82722	34.59753	32.78844	124.9
	19. Vasiliko-Moni	34.589	33.17181	34.60517	33.21953	592.3
	20. Kolpos Episkopis	34.58708	32.86072	34.60708	32.82681	108.3
2013	09. Kolpos Lemesou	34.70197	33.14719	34.68528	33.12111	45.9
	10. Moni	34.69389	33.16167	34.69611	33.18778	61.6
	11. Kolpos Lemesou	34.66889	33.12472	34.68278	33.1475	94.4
	13. Kolpos Episkopis	34.59139	32.87667	34.60167	32.86	89.3
	14. Kolpos Episkopis	34.58361	32.76083	34.59111	32.78806	152.3
	15. Kolpos Episkopis	34.59111	32.81861	34.59722	32.79278	124.8
	16. Kolpos Lemesou	34.59083	33.16722	34.60611	33.22278	594.8
	19. Vasiliko-Moni	34.60361	33.31944	34.605	33.255	618.5
	20. Kolpos Episkopis	34.5875	32.86028	34.60639	32.82806	108.6
2015	08. Mazotos	34.72278	33.44278	34.73722	33.47278	96.1
	11. Kolpos Lemesou	34.67056	33.11778	34.68444	33.15417	96.2
	12. Akrotiri Lemesou	34.55806	32.93472	34.55528	32.97333	49
	13. Kolpos Episkopis	34.59194	32.87806	34.60472	32.8625	88.7
	14. Kolpos Episkopis	34.60028	32.84194	34.5925	32.86389	100.9
	15. Kolpos Episkopis	34.59583	32.80806	34.58917	32.83194	125.2
	20. Kolpos Episkopis	34.59389	32.76778	34.59056	32.79917	152.8
	28. Pendaskhinos	34.64389	33.50722	34.62333	33.45389	575.8
2016	10. Moni	34.69472	33.16944	34.69667	33.19861	58.9
	11. Kolpos Lemesou	34.67028	33.12583	34.68472	33.15194	95.5
	12. Akrotiri Lemesou	34.55806	32.93806	34.55583	32.97667	48.5
	13. Kolpos Episkopis	34.5925	32.8825	34.60389	32.85889	90
	15. Kolpos Episkopis	34.5925	32.81111	34.59806	32.79417	127.2
	21. Petra tou Romiou - Zefiros	34.63778	32.45611	34.65722	32.40361	302.3
	24. Kolpos Chrysochou	35.1	32.47611	35.08417	32.45056	72.9
2017	08. Mazotos	34.72194	33.44222	34.7375	33.46944	95.6
	09. Kolpos Lemesou	34.70306	33.1525	34.69278	33.12472	45
	11. Kolpos Lemesou	34.68222	33.15361	34.66944	33.1275	99.1
	13. Kolpos Episkopis	34.59167	32.87778	34.60347	32.86028	89
	14. Kolpos Episkopis	34.59278	32.78806	34.58417	32.75028	152.2
	15. Kolpos Episkopis	34.59556	32.80806	34.58806	32.83417	124.7
	17. Kolpos Lemesou	34.60306	33.25	34.61917	33.30472	616.9
	20. Kolpos Episkopis	34.58944	32.8575	34.60972	32.82306	109
	22. Petra tou Romiou - Pafos	34.60722	32.61472	34.62167	32.56778	254.5
	23. Kolpos Chrysochou - Nisida Agiou Georgiou	35.08222	32.35806	35.08306	32.38778	110
	25. Kolpos Chrysochou	35.10167	32.4875	35.08389	32.46278	49.7
	28. Pendaskhinos	34.63944	33.49972	34.6175	33.44278	582.3

that since all records came from trawl nets over soft bottoms, this habitat-forming hydroid is extremely vulnerable to demersal fisheries.

Conclusively, our study does not only extend the known distribution of *L. myriophyllum* in the understudied mesophotic and deep-sea beds of the Eastern Mediterranean Sea, but also supports the idea that detailed recordings and photographic documentation of non-targeted species from fishing surveys provides valuable information on regional benthic biodiversity (Terribile *et al*., 2016; Gerovasileiou *et al*., 2019b).

4.6 First confirmed record of the agujon needlefish *Tylosurus imperialis* (Rafinesque, 1810) from Cyprus

Nikolas MICHAILIDIS

Five species of the family Belonidae are known from the Mediterranean, *Belone belone*, *B. svetovidovi*, *Tylosurus imperialis*, *T. choram* and *T. crocodilus*, the two latter being rare Lessepsian migrants. The agujon needlefish *Tylosurus imperialis* (Rafinesque, 1810) has been recorded in several Mediterranean countries, Tunisia, Italy, Croatia, Greece, Turkey, Lebanon, and Israel (Ismiridou *et al*., 2016; Zorica *et al*., 2016). The species has also been reported as present throughout the Levantine Basin by Bauchot (1987), but its presence in Cyprus has never been confirmed.

On November 23rd, 2019, three *Tylosurus imperialis* specimens were captured by the author while surface trolling artificial lures off Zygi, Cyprus (34.72ºN, 33.34ºE), relatively close to the coast. The specimens had elongated bodies, were round in cross section, 86-93 cm in total length, dark blue on the back and silver-white on the belly (Fig. 19). There were black lateral keels on the caudal peduncles and no gill rakers on the gill arches, both diagnostic characteristics of the genus *Tylosurus* (Whitehead *et al*., 1986). The caudal fin was deeply forked with the lower lobe significantly longer than the upper lobe. The anal fin was slightly forward in relation to the dorsal fin (first dorsal fin ray opposite second anal ray). The lower

Table 7. Morphometric and meristic measurements of the studied specimens in relation to published diagnostic characteristics of Mediterranean *Tylosurus* species (sources in text). Length measurements in mm, non-matching characteristics presented in bold.

Specimen	1	2	3	*T. imperialis*	*T. choram*	*T. crocodilus*
Sex	F	M	F			
Weight (g)	698	779	1062			
Total length	856	884	925			
Fork length	805	834	876			
Standard length	802	821	861	600-1400	**≤ 700**	≤ 1000
Body length (BL)	568	574	607			
Preanal length	609	624	670			
Predorsal length	622	637	678			
Prepelvic length	482	491	530			
Prepectoral length	238	251	261			
Head length	234	247	254			
Preorbital length	161	167	172			
Snout length	157	165	168			
Eye width	22	23	24			
Eye height	17	19	21			
Dorsal fin depth (D)	48	49	52			
Anal fin depth (A)	48	51	56			
Pectoral fin length (P)	60	63	65			
Ventral fin length (V)	43	48	50			
Dorsal fin rays	25	24	23	23-26	**19-24**	**21-24**
Anal fin rays	22	22	22	21-23	19-22	18-22
Pectoral fin rays	12	13	13	12-14	**13-15**	**13-15**
Ventral fin rays	6	6	6			
Predorsal scales	397	396	404	360-430	**250-320**	**270-340**
Vertebrae	93	93	93	93-96	**78-80**	**75-80**
BL / D	11.8	11.8	11.7	10.5-13.3	**5.4-10.6**	**5.4-10.6**
BL / A	11.8	11.3	10.8	9.7-11.7	**5.5-8**	**5.5-8**
BL / P	9.5	9.1	9.3	8-12.4	**6.6-8.3**	**6.6-8.3**
BL / V	13.2	12	12.1	10-14.1	**7.9-10.6**	**7.3-10.6**

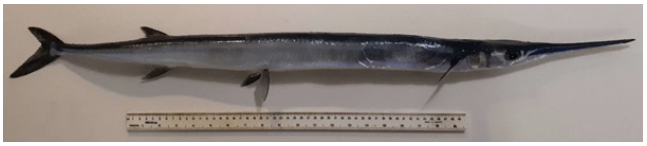

Fig. 19: *Tylosurus imperialis* (specimen 3) from Zygi, Cyprus (ruler: 50 cm).

jaw was slightly longer than the upper jaw and the vomer lacked teeth. All three specimens were sexually mature individuals, already spent. In the two females, the left ovary was absent and, in the male, the left testis was significantly less developed than the right one. The stomachs were empty in all specimens. A long honeycomb-like physoclist swim bladder was present. Bones were white, not green as in the genus *Belone*. Morphological characteristics of the specimens were in agreement with the published diagnostic characteristics of *T. imperialis* and differed from those of *T. choram* and *T. crocodilus* (Whitehead *et al*., 1986; Ismiridou *et al*., 2016; Froese and Pauly, 2013) (Table 7). It is noted that big needlefish have been observed in the area before and that fishers have always considered them as large *B. belone* individuals, so it is very likely that *T. imperialis* has indeed been present in Cyprus for a long time prior to this record, as reported by Bauchot (1987).

4.7 First record of *Ethusa mascarone* (Herbst, 1785) in Syrian marine waters (Eastern Mediterranean)

Reem ALSHIKH RASHEED and Zinah AL-HOSNE

To date, the crustacean diversity of Syrian marine waters includes more than 100 species of Malacostraca, the majority of which are native species of Atlantic origin, while 23% are considered non-indigenous, mostly introduced via the Suez Canal (Ammar & Khalifa, 2019 and references therein).

In this work, the first occurrence of *Ethusa mascarone* (Herbst, 1785) (Crustacea, Decapoda, Brachyura, Ethusidae) in Syrian waters is documented, adding knowledge on the marine biodiversity of Syria and on the distribution of this species in the Eastern Mediterranean basin.

Within the framework of a study on the feeding habits of *Chelidonichthys cuculus* (Linnaeus, 1758) carried out in Syrian waters by trawls between 16/6/2017 and 22/5/2018, one specimen of *E. mascarone* was found in the stomach of a red gurnard (Fig. 20). The red gurnard was caught at a depth of 100 m in Burj Islam, Lattakia region (35.684436ºN, 35.783768ºE). The sample, lightly digested, was identified following Riedl (1983) and then measured to the nearest centimetre (carapace length 1 cm × carapace width 0.8 cm), weighed to the nearest gram (0.512 g), preserved in 4% formaldehyde and deposited at the Laboratory of Higher Research of the Faculty of Science, Tishreen University, Lattakia, Syria. However, it was not possible to determine the sex of the crustacean due to the loss of some parts of the sample.

Ethusa mascarone has been recorded in the waters of other Mediterranean countries, such as Turkey (Bakir *et al*., 2014), Greece (Corsini-Foka & Pancucci-Papadopoulou, 2012), Lebanon (Aguilar *et al*., 2018), Israel, Egypt, Tunisia, Morocco, Spain, France, Italy, and Croatia (GBIF, 2020).

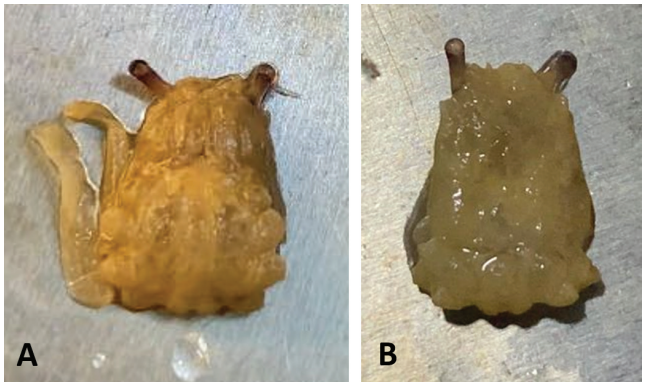

Fig. 20: (A) Ventral view of *Ethusa mascarone*, (B) Dorsal view of *Ethusa mascarone* found in the stomach of a red gurnard from Syrian marine waters.

Acknowledgements

Vasilis Gerovasileiou would like to thank Argyro Zenetos and all reviewers for sharing their time, knowledge, and expertise during the review process of all sub-sections of this Collective Article. Paolo Guidetti thanks very much Mr. Tony Dalmasso and Mme Céline Casamata (Maritime Fishing and Aquaculture Departmental Committee of Maritime Alps – CDPMEM, France) for precious information provided about the capture of *Lobotes surinamensis* in France. Gianni Insacco and Bruno Zava are grateful to Mr. Marco Schifitto, owner of the fishing boat "Nettuno 3SRI006", for his prompt information and for the *Orcynopsis unicolor* specimen that he provided. Andrea Lombardo and Giuliana Marletta are grateful to Leopoldo Moro for his suggestions on the manuscript concerning *Taringa tritorquis*. Cataldo Licchelli and Francesco Denitto would like to thank Riccardo Giannotta, the local fisher who shared data and information about the *Lobotes surinamensis* record from Italy. Giambattista Bello and Angelo Vazzana thank an anonymous referee for his suggestions. Ilija Ćetković and Ana Pešić are thankful to the local fishers Vaso Kostić and Milan Milić for providing photos and other data. Dimitris Poursanidis and Fabio Crocetta thank Manolis Darakis (Greece) for sharing data on *Dondice trainitoi*. Maria Corsini-Foka, Gianni Insacco and Bruno Zava thank Mr Tsetin Karaosman, the captain of the fishing vessel "Evagelistra", who provided information on the capture of the reported *Tetrapturus belone* specimen from Rhodes. The same authors also warmly thank two reviewers for providing suggestions that greatly improved the first version of the manuscript. Vasilis Gerovasileiou, Carlos Jimenez and Ioannis Thasitis would like to thank Antonis Petrou, Katerina Achilleos, Magdalene Papatheodoulou, Louis Hadjioannou and the captain and crew of the R/V Megalohari for their help during col-

lecting and sorting haul samples. The MEDITS survey in Cyprus was conducted by the Department of Fisheries and Marine Research under the EU Data Collection Framework, co-funded by the European Fisheries Fund 2007-2013, the European Maritime and Fisheries Fund (EMFF) 2014-2020 and national resources of the Republic of Cyprus.

References

Aguilar, R., Garcia, S., Perry, A.L., Alvarez, H., Blanco, J., Bitar, G., 2018. *2016 Deep-sea Lebanon Expedition: Exploring Submarine Canyons*. Oceana, Madrid, 94 pp.

Akyol, O., Aydın, I., Gülşahin, A., Kara, A., 2013. Records of three uncommon fishes from Izmir Bay (Aegean Sea, Turkey). *Journal of Applied Ichthyology*, 29, 925-926.

Akyol, O., Ceyhan, T., 2012. Turkish driftnet fishery for Albacore, *Thunnus alalunga* (Actinopterygii: Perciformes: Scombridae), and incidental catches in the eastern Mediterranean. *Acta Ichthyologica et Piscatoria*, 42, 131-135.

Akyol, O., Erdem M., Ünal, V., Ceyhan, T., 2005. Investigations on drift-net fishery for swordfish (*Xiphias gladius* L.) in the Aegean Sea. *Turkish Journal of Veterinary and Animal Sciences*, 29, 1225-1231.

Ammar I., Khalifa F., 2019. First record of *Brachynotus atlanticus* Forest, 1957 (Decapoda, Varunidae) from Syrian coast. *Species*, 20, 151-154.

Bakir, A.K., Katağan, T., Aker, H.V., Özcan, T., Sezgin M., Ateş A.S., Koçak, C., Kirkim F., 2014. The marine arthropods of Turkey. *Turkish Journal of Zoology*, 38, 765-831.

Bauchot, M.-L., 1987. Poissons osseux. p. 891-1421. In: *Fiches FAO d'identification pour les besoins de la pêche. (rev. 1). Méditerranée et mer Noire. Zone de pêche 37. Vol. II.* Fischer, W., Bauchot, M.L., Schneider, M. (Eds.). Commission des Communautés Européennes and FAO, Rome.

Bello, G., 2008. Cephalopoda. In: *Checklist of the flora and fauna of the Italian seas*. G. Relini (Ed.). *Biologia Marina Mediterranea*, 15 (suppl. 1), 318-322.

Bello, G., Causse, R., Lipej, L., Dulčić, J., 2014. A proposed best practice approach to overcome unverified and unverifiable "first records" in ichthyology. *Cybium*, 38, 9-14.

Betti, F., 2011. *Il regno dei Nudibranchi. Guida ai molluschi opistobranchi della Riviera del Conero*. Editrice La Mandragora, Imola, 198 pp.

Bilecenoğlu, M., Kaya, M., Cihangir, B., Çiçek, E., 2014. An updated checklist of the marine fishes of Turkey. *Turkish Journal of Zoology*, 38, 901-929.

Bilecenoğlu, M., Taskavak, E., Mater, S., Kaya, M., 2002. Checklist of the marine fishes of Turkey. *Zootaxa*, 113, 1-194.

Bilge, G., Filiz, H., Gülşahin, A., 2017. Occurrence of *Lobotes surinamensis* (Osteichthyes: Lobotidae) in the Mediterranean: Historical and recent data. *Zoology in the Middle East*, 63, 43-47.

Bo, M., 2017. *Deep-sea corals of the Mediterranean Sea*. FAO, I7256EN. http://www.fao.org/3/a-i7256e.pdf

Bradai, M.N., Quignard, J.P., Bouain, A., Jarboui, O., Ouannes-Ghorbel, A. *et al*., 2004. Ichtyofaune autochtone et exotique des côtes Tunisiennes: recensement et biogéographie. *Cybium*, 28, 315-328.

Brandl, S., Wagner, M., Hofrichter, R., Patzner, R.A., 2011. First record of the clingfish *Apletodon dentatus* (Gobiesocidae) in the Adriatic Sea and a description of a simple method to collect clingfishes. *Bulletin of Fish Biology*, 13, 65-69.

Breen, P., Cañadas, A., Ó Cadhla, O., Mackey, M., Scheidat, M. *et al.*, 2017. New insights into ocean sunfish (*Mola mola*) abundance and seasonal distribution in the northeast Atlantic. *Scientific Reports*, 7, 2025.

Cerrano, C., Bianchelli, S., Di Camillo, C.G., Torsani, F., Pusceddu, A., 2015. Do colonies of *Lytocarpia myriophyllum*, L. 1758 (Cnidaria, Hydrozoa) affect the biochemical composition and the meiofaunal diversity of surrounding sediments? *Chemistry and Ecology*, 31, 1-21.

Cervera, J.L., Calado, G., Gavaia, C., Malaquias, M.A.E., Templado, J. *et al*., 2004. An annotated and updated checklist of the opisthobranchs (Mollusca: Gastropoda) from Spain and Portugal (including islands and archipelagos). *Boletín de l'Instituto Español de Oceanografía*, 20, 1-122.

Ceyhan, T., Akyol, O., 2014. On the Turkish surface longline fishery targeting swordfish in the Eastern Mediterranean Sea. *Turkish Journal of Fisheries and Aquatic Sciences*, 14, 825-830.

Collette, B., Heessen, H., 2015. *Tetrapturus belone*. The IUCN Red List of Threatened Species 2015:e.T170334A48680954.

Collette, B.B., 2016. Scombridae p. 2896-2915. In: *The living marine resources of the Eastern Central Atlantic. Volume 4: Bony fishes part 2 (Perciformes to Tetradontiformes) and Sea turtles*. Carpenter, K.E., De Angelis, N. (Eds). FAO Species Identification Guide for Fishery Purposes, Rome.

Corsini-Foka, M., Pancucci-Papadopoulou, M.A., 2012. Inventory of Crustacea Decapoda and Stomatopoda from Rhodes Island (Eastern Mediterranean Sea), with emphasis on rare and newly recorded species. *Journal of Biological Research*, 18, 359-371.

Costello, M.J., Bouchet, P., Boxshall, G., Arvanitidis, C., Appeltans, W., 2020. *European Register of Marine Species*. http://www.marbef.org/data/erms.php (Accessed 28 April 2020).

Dailianis, T., Akyol, O., Babali, N., Bariche, M., Crocetta, F. *et al*., 2016. New Mediterranean Biodiversity Records (July 2016). *Mediterranean Marine Science*, 17, 608-626.

De Carlo, F., Massaro, A., Musumeci, C., Rossetti, I., Sartor, P., Ligas, A., 2017. A new record of Atlantic tripletail, *Lobotes surinamensis* (Bloch, 1790), in the Ligurian Sea (NW Mediterranean). *Journal of Applied Ichthyology*, 33, 539-541.

Deidun, A., Vella, P., Sciberras, A., Sammut, R., 2010. New records of *Lobotes surinamensis* (Bloch, 1790) in Maltese coastal waters. *Aquatic Invasions*, 5, S113-S116.

Di Camillo, C.G., Boero, F., Gravili, C., Previati, M., Torsani, F., Cerrano, C., 2013. Distribution, ecology and morphology of *Lytocarpia myriophyllum* (Cnidaria: Hydrozoa), a Mediterranean Sea habitat former to protect. *Biodiversity and Conservation*, 22, 773-787.

Di Natale, A., Srour, A, Hattour, A., Keskin, Ç., Idrissi, M., Orsi Relini, L., 2009. *Regional study on small tunas in the Mediterranean including the Black Sea. Studies and Reviews.* General Fisheries Commission for the Mediterranean, No 85, FAO, Rome, 132 pp.

Dieuzeide, R., Goëau-Brissonière, W., 1951. Les prairies de

Zostères naines et de Cymodocés (Mattes) aux environs d'Alger. *Bulletin Travaux Station Aquiculture et Pêche Castiglione*, 3, 11-53.

Dieuzeide, R., Novella, M., Roland, J., 1955. Catalogue des poissons des côtes algériennes. III. Ostéoptérygiens. *Bulletin Travaux Station Aquiculture et Pêche Castiglione*, 6, 1-384.

Doderlein, P., 1878-79. *Prospetto metodico delle varie specie di pesci riscontrate sin'ora nelle acque marine e fluviali della Sicilia. Prodromo della Fauna Ittiologica Sicula. Catalogo delle relative preparazioni tassidermiche ed anatomiche che si conservano nel museo zoologico-zootomico della R. Università di Palermo.* Tipografia del Giornale di Sicilia, Palermo.

Elbaraasi, H., Elabar, B., Elaabidi, S., Bashir, A., Elsilini, O., Shakman, E., Azzurro, E., 2019. Updated checklist of bony fishes along the Libyan coast (southern Mediterranean Sea). *Mediterranean Marine Science*, 20, 90-105.

Espinosa, J., Ortea-Rato, J., 2001. Moluscos del Mar de Caribe de Costa Rica: desde Cahuita hasta Gandoca. Mollusca of Costa Rica Carribean Sea: from Cahuita to Gandoca. *Avicennia*, suppl. 4, 1-20.

Froese, R., Pauly, D., 2013. *FishBase*. www.fishbase.org (Accessed 16 April 2020)

Furfaro, G., Mariottini, P., 2020. A new *Dondice* Marcus Er. 1958 (Gastropoda: Nudibranchia) from the Mediterranean Sea reveals interesting insights into the phylogenetic history of a group of Facelinidae taxa. *Zootaxa*, 477731, 1-22.

GBIF, 2020. *Global Biodiversity Information Facility*. https://www.gbif.org/ (Accessed 25 April 2020)

General Fisheries Commission for the Mediterranean (GFCM), 2018. *Data Collection Reference Framework (DCRF). Version: 19.1*. http://www.fao.org (Accessed 20 November 2019)

Gerovasileiou, V, Smith, C.J., Sevastou, K., Papadopoulou, K.-N., Dailianis, T. *et al.*, 2019a. Habitat mapping in the European Seas - is it fit for purpose in the marine restoration agenda? *Marine Policy*, 106, 103521.

Gerovasileiou, V., Akel, E.H.Kh., Akyol, O., Alongi, G., Azevedo, F., *et al*., 2017. New Mediterranean Biodiversity Records (July, 2017). *Mediterranean Marine Science*, 18, 355-384.

Gerovasileiou, V., Smith, C.J., Kiparissis, S., Stamouli, C., Dounas, C., Mytilineou, Ch., 2019b. Updating the distribution status of the critically endangered bamboo coral *Isidella elongata* (Esper, 1788) in the deep Eastern Mediterranean Sea. *Regional Studies in Marine Science*, 28, 100610.

Glavičić, I., Kovačić, M., 2016. A quantitative sampling method for assessment of deep cryptobenthic ichthyofauna using trimix diving. *Acta Ichthyologia et Piscatoria, Szczecin*, 46, 43-47.

Golani, D., Öztürk, B., Basusta, N. (Eds), 2006. *The Fishes of the Eastern Mediterranean*. Turkish Marine Research Foundation. Istanbul, Turkey, 259 pp.

Grau, A., Massutí, E., Riera, F., Quetglas, A., Grau, A.M., 2000. Primera cita d'un exemplar adult de *Luvarus imperialis* Rafinesque, ISIO en aigües de Balears (Mediterrania Occidental). Consideracions anatomiques i biologiques. *Bolletí de la Societat d'Història Natural de les Balears*, 43, 91-98.

Grémillet, D., White, C.R., Authier, M., Dorémus, G., Ridoux, V. *et al.*, 2017. Ocean sunfish as indicators for the 'rise of slime'. *Current Biology*, 27, R1249-R1267.

Guerrero-Kommritz, J., Rodriguez-Bermudez, A., 2018. Soft-bottom octopods (Cephalopoda: Octopodidae) of the southern Caribbean with the description of a new species of *Macrotritopus*. *Marine Biodiversity*, 49, 1197-1215.

Høeg, J., 1995. The biology and life cycle of the Cirripedia Rhizocephala. *Journal of the Marine Biological Association*, 75, 517-550.

Høeg, J., Lützen, J., 1985. *Crustacea Rhizocephala, Marine invertebrates of Scandinavia* no. 6, Norwegian University Press, 92 pp.

Irmak, E., Alparslan, M., 2008. A New record for Çanakkale (Turkey) Strait: *Luvarus imperialis* Rafinesque, 1810 (Pisces: Luvaridae). *Journal of Fisheries Sciences.com*, 2, 506-509.

Ismiridou, A., Minos, G., Kokokiris, L., Alexandrou, M., Kyriakidou, M., Karidas, T., 2016. Genetic and phenotypic identification of *Tylosurus acus imperialis* in Thermaikos Gulf, North Aegean Sea. *Cahiers de Biologie Marine*, 57, 9-15.

Jatta, G., 1896. I Cefalopodi viventi nel Golfo di Napoli. (Sistematica). *Fauna und Flora des Golfes von Neapel*, 23, 1-268.

Karachle, P., Angelidis, A., Apostolopoulos, G., Ayas, D., Ballesteros, M. *et al*., 2016. New Mediterranean Biodiversity Records (March 2016). *Mediterranean Marine Science*, 17, 230-252.

Katsanevakis, S., Poursanidis, D., Hoffman, R., Rizgalla, J., Rothman, S.B.-S. *et al*., 2020. Unpublished Mediterranean records of marine alien and cryptogenic species. *Bioinvasions Records*, 9, 165-182.

Kovačić, M., 2005. An annotated checklist of the family Gobiidae in the Adriatic Sea. *Annales Series historia naturalis*, 15, 21-44.

Kovačić, M., 2008. The key for identification of Gobiidae (Pisces: Perciformes) in the Adriatic Sea. *Acta Adriatica*, 49, 245-254.

La Mesa, G., Annunziatellis, A., Filidei Jr, E., Fortuna, C.M., 2016. Bycatch of Myliobatid Rays in the Central Mediterranean Sea: the Influence of Spatiotemporal, Environmental, and Operational Factors as Determined by Generalized Additive Modeling. *Marine and Coastal Fisheries*, 8, 382-394.

Lipej, L., Dobrajc, Z., Castellarin, C., Odorico, R., Dulčić, J., 2007. New records of some rare and less-known fishes in the Gulf of Trieste (Northern Adriatic). *Annales, Series Historia Naturalis*, 17, 171-176.

Martín-Hervás, M.R., Carmona, L., Jensen, K.R., Licchelli, C., Vitale, F. *et al.*, 2020. Description of a new pseudocryptic species of *Elysia* Risso, 1818 (Heterobranchia, Sacoglossa) in the Mediterranean Sea. *Bulletin of Marine Science*, 96, 127-144.

Melo-Merino, S.M., Reyes-Bonilla, H., Lira-Noriega, A., 2020. Ecological niche models and species distribution models in marine environments: A literature review and spatial analysis of evidence. *Ecological Modelling*, 415, 108837.

Moro, L., Ortea, J., 2015. Nuevos taxones de babosas marinas de las islas Canarias y de Cabo Verde (Mollusca: Heterobranchia). *Vieraea*, 43, 21-86.

Mouritsen, K.N., Geyti, S.N.S., Lützen, J., Høeg, J.T., Glenner, H., 2018. Population dynamics and development of the rhi-

zocephalan *Sacculina carcini*, parasitic on the shore crab *Carcinus maenas*. *Diseases of Aquatic Organisms*, 131, 199-211.

Mytilineou, C., Akel, E., Babali, N., Balistreri, P., Bariche, M. *et al*., 2016. New Mediterranean Biodiversity Records (November, 2016). *Mediterranean Marine Science*, 17, 794-821.

Naef, A., 1923. Die Cephalopoden. *Fauna und Flora des Golfes von Neapel*, 35, 1-863.

Nakamura, I., 1985. *FAO species catalogue. Vol. 5. Billfishes of the world. An annotated and illustrated catalogue of marlins, sailfishes, spearfishes and swordfishes known to date.* FAO Fisheries Synopsis 125, FAO, Rome, 65 pp.

Norman, M.D., Finn, J.K., Hochberg, F.G., 2016. Family Octopodidae. In: *Cephalopods of the world. An annotated and illustrated catalogue of species known to date. Vol. 3.* Jereb, P., Roper, C.F.E., Norman, M.D., Finn, J.K. (Eds). *FAO Species Catalogue for Fishery Purposes*, 4, 36-215.

Øksnebjerg, B., 2000. The Rhizocephala (Crustacea: Cirripedia) of the Mediterranean and Black Seas: Taxonomy, Biogeography and Ecology. *Israel Journal of Zoology*, 46, 1-102.

Ortea, J.A., Perez, J.M., Llera E., 1982. Molluscos Opistobranquios recolectados durante el Plan de Bentos Circuncanario. Doridacea: primera parte. *Cuadernos del Crinas*, 3, 1-48.

Papaconstantinou, C., 2014. *Fauna Graeciae*. *An updated checklist of the fishes in the Hellenic Seas*. Monographs on Marine Sciences, 7, HCMR, Athens, 340 pp.

Perrone, A.S., 1985. Una nuova specie di Nudibranchi Doridiani del litorale salentino: *Taringa pinoi* n. sp. *Thalassia Salentina*, 15, 75-88.

Pontes, M., 2020. *Dondice trainitoi in OPK-Opisthobranquis*. https://opistobranquis.info/en/lfIET (Accessed 5 May 2020)

Pope, E.C., Hays, G.C., Thys, T.M., Doyle, T.K., Sims, D.W. *et al*., 2010. The biology and ecology of the ocean sunfish *Mola mola*: a review of current knowledge and future research perspectives. *Reviews in Fish Biology and Fisheries*, 20, 471-487.

Potter, I.F., Howell, W.H., 2011. Vertical movement and behavior of the ocean sunfish, *Mola mola,* in the northwest Atlantic. *Journal of Experimental Marine Biology and Ecology,* 396, 138-146.

Relini, G., 2010. Cirripedia. *Biologia Marina Mediterranea*, 17, 466-470.

Riedl, R., 1983. *Fauna und flora der Mittelmeeres*. Paul Parey, Hamburg and Berlin, Deutschland, 836 pp.

Rossi, S., Bramanti, L., Gori, A., Orejas, C. (Eds), 2017. *Marine animal forests: the ecology of benthic biodiversity hotspots*. Springer International Publishing, Cham, Switzerland, 1366 pp.

Saruwatari, T., López, J.A., Pietsch, T.W., 1997. Cyanine blue: a versatile and harmless stain for specimen observation. *Copeia*, 4, 840-841.

Serena, F., 2005. *Field identification guide to the sharks and rays of the Mediterranean and Black Sea*. FAO Species Identification Guide for Fishery Purposes, Rome, 97 pp.

Skopis, H., 2019. *Swordfish killed by swimmers on a beach in Chalkida, Greece*. *GreekReporter.com*. https://greece.greekreporter.com/2019/07/13/swordfish-killed-by-swimmers-on-a-beach-in-chalkida-greece/ (Accessed 2 May 2020).

Soufi-Kechaou, E., Ounifi-Ben Amor, K., Ben Souissi, J., Rafrafi-Nouira, S., Capapé, C., 2018. Additional record of tripletail *Lobotes surinamensis* (Osteichthyes: Lobotidae) in Tunisian waters (central Mediterranean Sea). *Annales, Series Historia Naturalis*, 28, 37-42.

Stamouli, C., Akel, E.H.Kh., Azzurro, E., Bakiu, R., Bas, A.A. *et al.*, 2017. New Mediterranean Biodiversity Records (December 2017). *Mediterranean Marine Science*, 18, 534-556.

Terribile, K., Evans, J., Knittweis, L., Schembri, P.J., 2016. Maximising MEDITS: Using data collected from trawl surveys to characterise the benthic and demersal assemblages of the circalittoral and deeper waters around the Maltese Islands (Central Mediterranean). *Regional Studies in Marine Science*, 3, 163-175.

Tiralongo, F., Messina, G., Coco, S., Lombardo, B.M., 2018. On the presence of a well-established population of *Lobotes surinamensis* (Bloch, 1790) in the Central Mediterranean Sea. *ANNALES Series Historia Naturalis*, 28, 31-36.

Trainito, E., Doneddu, M., 2014. *Nudibranchi del Mediterraneo*. Il Castello, Cornaredo, 192 pp.

Walls, R.H.L., Buscher, E., 2016. *The IUCN Red List of Threatened Species*. https://www.iucnredlist.org (Accessed 18 November 2019)

Werner, M., 2001. Prevalence of the parasite *Sacculina carcini* Thompson 1836 (Crustacea, Rhizocephala) on its host crab *Carcinus maenas* (L.) on the west coast of Sweden. *Ophelia*, 55, 101-110.

Whitehead, P.J.P., Bauchot, M.-L., Hureau, J.-C., Nielsen, J., Tortonese, E. (Eds), 1986. *Fishes of the North-eastern Atlantic and the Mediterranean*. Vols. I-III, UNESCO, Paris, 1473 pp.

WoRMS Editorial Board, 2020. *World Register of Marine Species*. http://www.marinespecies.org (Accessed 3 February 2020).

Zorica, B., Cikes Kec, V., Pallaoro, A., Zanki, K., Brzulja, G., Kraljevic, V., 2016. First record of agujon needlefish, *Tylosurus acus imperialis* (Rafinesque, 1810) (Osteichthyes: Belonidae) in the Croatian part of the Adriatic Sea. *Acta Adriatica*, 57, 183-186.